

European
Materials Research Society
Spring Meeting

E-MRS'98

Scientific / Technical Symposia
&
Exhibition

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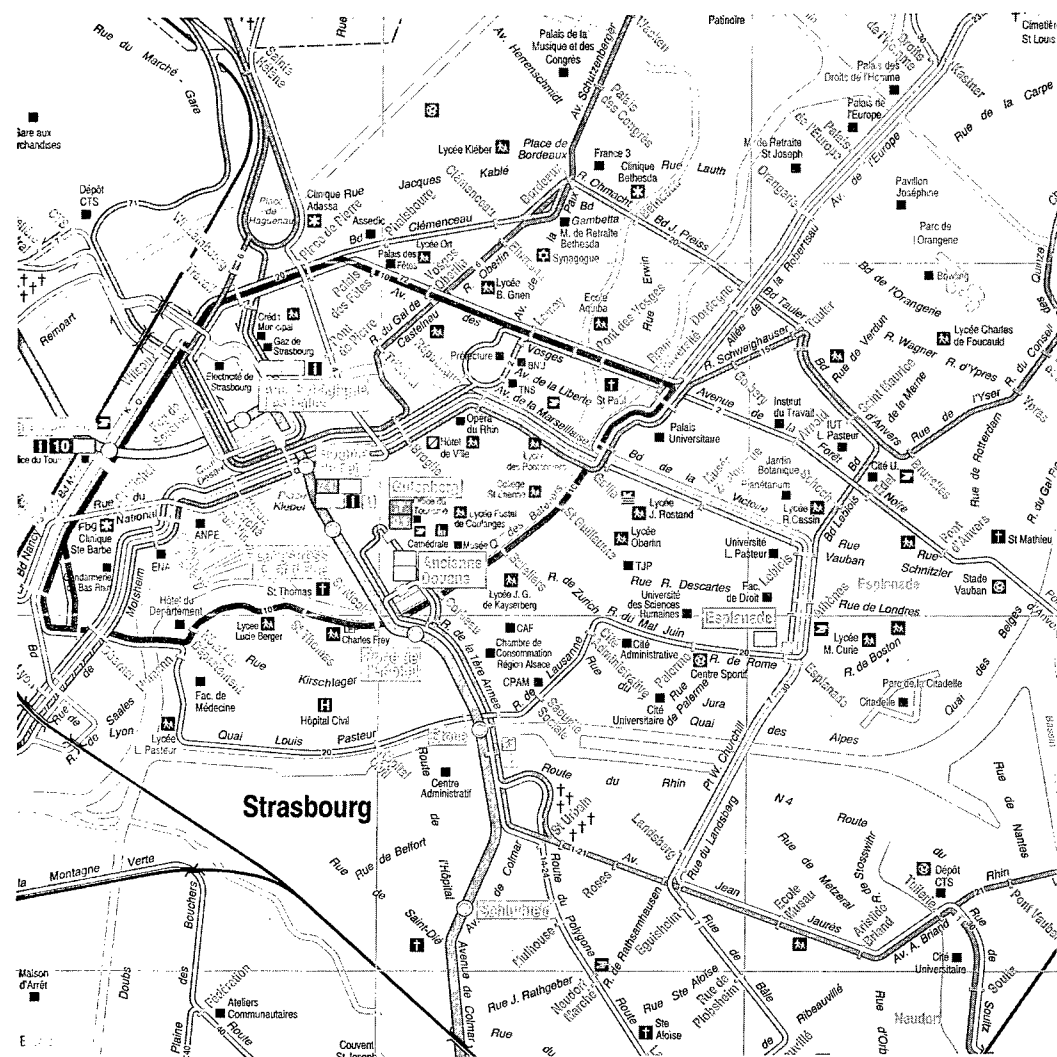
Congress Center
- Palais de la Musique et des Congrès -
Strasbourg (France)

June 16 - 19, 1998

19980710 133

SCIENTIFIC
PROGRAMME

€-MRS



Important Information for Conference Participants

Conference Venue

*The E-MRS'98 Spring Meeting will be held from June 16 to 19, 1998 at the Congress Center («Palais de la Musique et des Congrès»), Place de Bordeaux, Strasbourg, France.
More information about Strasbourg: <http://www.sdv.fr/strasbourg>.*

Transportation

By car:

- *From the South of Strasbourg: Highway A35 Exit «WACKEN» (A350).*
 - *From the North of Strasbourg: Highway A34 Exit «CRONENBOURG» then Exit WACKEN» (A350).*
- After the first traffic-lamp, turn at your right side. The Congress Center and an important parking are on your left side after about 300 meters (Avenue Herrenschmidt).*

By plane:

Regular shuttles from the airport to the train station of Strasbourg. There take the regular tramway and bus to the Congress Center (see below).

By train or from the hotels which are mainly located near the train station or in the center of Strasbourg:

- *From the Train Station: Tramway to «Place de l'Homme de Fer» (tramway line to «Baggersee»)*
- *From the «Place de l'Homme de Fer» : bus n°6 (end station «Hoenheim Cigognes») till bus stop «Palais des Congrès».*

Hotel Reservations

Early reservation is essential for all participants because in the same week a session of the European Parliament will be held in Strasbourg.

To book an hotel room, please complete and return the Hotel Reservation Form (at the end of this booklet) to: Mrs Brigitte PAPILLON, Palais des Congrès, Service Hébergement, Place de Bordeaux, 67082 Strasbourg Cedex (France) - Phone (+33) 3 88 37 67 87 - Fax (+33) 3 88 37 38 43 before May 18, 1998.

Posters

The maximum size for the posters is:

Vertical1.10 m
Horizontal.....0.90 m

The poster-boards will be full white boards. Tape to stick the posters will be provided by E-MRS.

Conference Reception

Each participant is invited to attend the Conference Reception which will take place in the Congress Center on Wednesday June 17, 1998 at 20:00. During this reception, the E-MRS Graduate Student Award winners will get their prizes.

Registration

*Each participant is kindly asked to fill a Registration Form (at the end of this booklet) and sent it to:
Dr. Paul SIFFERT, E-MRS'98 Spring Meeting Registration, BP 20, 67037 Strasbourg Cedex 2 (France).
Fax: (+33) 3 88 10 63 43.*

Registration Fees:

1. FULL RATE

including the Proceedings of one symposium, breaks, lunches, E-MRS membership for one year and 12 issues of the MRS Bulletin.

BEFORE MAY 18, 1998 2 700,00 FF net
AFTER MAY 18, 1998 3 200,00 FF net

2. STUDENT RATE

including breaks, lunches.

Students have to give evidence of their university registration

BEFORE MAY 18, 1998 1 500,00 FF net
AFTER MAY 18, 1998 1 900,00 FF net

Payment of Fees:

Payment should be made in french francs for the net total amount due. The following possibilities are offered:

- Cheque (to the order of E-MRS)
- Credit card (Carte Bleue, Visa, Eurocard/ Mastercard)
- Bank draft:

Bank: BANQUE POPULAIRE
Address: BP 401/R1, F-67001 Strasbourg Cedex
Account: ASS. EMRS CONFERENCES
Nr. 17607/00001/111 913 85439/11

Bank transfer charges will be at a minimum provided you instruct your bank as follows:

Please pay through S.W.I.F.T. to BPRS FR 2A

BANQUE POPULAIRE
BP 401/R1
67001 Strasbourg Cedex France
affiliated C.C.B.P. (Paris)

- Purchase order from institution/company.

If you have paid your registration fees by a cheque or a bank transfer, please take a copy of them with you at the Conference. Without any written evidence of your payment, the E-MRS Organizing Committee would be obliged to ask you to pay the fees at your arrival.

Conference Secretariat

The Conference Secretariat will be open on Monday, June 15, 1998 from 15:00 to 19:00 at the Congress Center, «SCHWEITZER» Entrance, in the main hall.

During the Conference, it will be open from 8:00 till the end of the sessions.

Proceedings

Full length papers will be published in a Proceedings Volume by ELSEVIER/NORTH HOLLAND.

Submitted papers will be refereed.

All articles should be submitted on the first day of the conference (or date of arrival).

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This Scientific Programme is also available through INTERNET :
<http://www-emrs.c-strasbourg.fr>

E-MRS'98 SPRING MEETING



EQUIPMENT EXHIBITION

June 17-18, 1998
Congress Center
- Palais de la Musique et des Congrès -
STRASBOURG (France)

Following companies will welcome you at their booth:

• ABB EXTREL	USA
• BRUCKER AXS Analytical X-ray Systems GmbH	Germany
• CABURN-MDC	France
• ELSEVIER SCIENCE	The Netherlands
• EMCORE Corporation	USA
• EPI Europe	United Kingdom
• HIGH VOLTAGE Engineering Europa B.V.	The Netherlands
• GOODFELLOW	France
• JIPELEC	France
• JOHNSON-MATTHEY	France
• LOT ORIEL	France
• NANO INSTRUMENTS Inc.	USA
• OMICRON VAKUUMPHYSIK	Germany
• OXFORD University Press	United Kingdom
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• SENTECH Gesellschaft für Sensortechnik mbH	Germany
• SHINKOSHA Co. Ltd	Japan
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• SPRINGER-Verlag GmbH	Germany
• SURFACE PREPARATION LABORATORY	The Netherlands
• THOMSON-CSF LASER	France
• VG SEMICON	United Kingdom
• WILEY - VCH Verlag GmbH	Germany

According to E-MRS records on April 8, 1998

PLENARY SESSION

Wednesday June 17, 1998
Mercredi 17 juin 1998

Morning
Matin

PS-1	8:30-9:05	S. NAKAMURA <i>Nichia Chemical Industries Ltd., Anan, Tokushima 774-8601, Japan</i> «PRESENT AND FUTURE OF GaN-BASED BLUE/GREEN LED»
PS-2	9:05-9:40	M. ERMAN <i>Director of Optical Systems Department, ALCATEL, Route de Nozay, 91460 Marcoussis, France</i> «OPTOELECTRONIC DEVICES FOR FUTURE TELECOMMUNICATION SYSTEMS»
PS-3	9:40-10:15	G. ABSTREITER <i>Walter Schottky Institut, Technische Universität München, Am Coulomb-Wall, 85748 Garching/München, Germany</i> «SEMICONDUCTOR-NANOSTRUCTURES, BASICS AND POSSIBLE APPLICATIONS»
PS-4	10:15-10:50	D.J. EHRLICH <i>Whitehead Institute, Massachusetts Institute of Technology, Nine Cambridge Center, Cambridge MA 02142, USA</i> «BIOMEMS: MICRODEVICES FOR THE BIOMOLECULAR INFORMATION AGE»
	10:50-11:10	BREAK
PS-5	11:10-11:45	U. SCAPANINI <i>President of the Committee on Research, Technological Development and Energy of the European Parliament</i>
PS-6	11:45-12:20	Dr. FORSTER <i>Commission of the European Communities, ESPRIT, Brussels, Belgium</i>
PS-7	12:20-12:55	Dr. GRIES <i>Bundesministeriums für Bildung, Wissenschaft, Forschung und Technologie, Bonn, Germany</i>
	12:55	LUNCH

E-MRS'98 SPRING MEETING



SYMPOSIUM A	Defects in Silicon: Hydrogen
SYMPOSIUM B	Light Emission from Silicon: Progress Towards Si-based Optoelectronics
SYMPOSIUM C	Growth, Characterization and Applications of Bulk II-VI's
SYMPOSIUM D	Thin Films Epitaxial Growth and Nanostructures
SYMPOSIUM E	Thin Films Material for large Area Electronics
SYMPOSIUM F	Technique and Challenges for 300mm Silicon: Processing, Characterization, Modelling and Equipments
SYMPOSIUM G	Surface Processing: Laser, Lamp, Plasma
SYMPOSIUM H	Materials Aspects in Microsystem Technologies
SYMPOSIUM I	Rapid Thermal Processing
SYMPOSIUM J	Ion Implantation into Semiconductors, Oxides and Ceramics
SYMPOSIUM K	Carbon-based Materials for Microelectronics
SYMPOSIUM L	Nitrides and Related Wide Band Gap Materials
SYMPOSIUM M	Molecular Photonics for Optical Telecommunications: Materials, Physics and Device Technology
SYMPOSIUM N	Material and Processes for Submicron Technologies

E-MRS'98 SPRING MEETING



SYMPOSIUM A

Defects in Silicon: Hydrogen

Symposium Organizers

J. WEBER Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany

A. MESLI CNRS/PHASE, Strasbourg, France

SYMPOSIUM A

Tuesday June 16, 1998
Mardi 16 juin 1998

Morning
Matin

SESSION I - H₂ Molecules in Silicon, Part 1

Chairperson: M. Stavola, *Lehigh University, Bethlehem, USA*

- A-I.1 8:30-9:05 - Invited - *H₂ MOLECULES IN CRYSTALLINE SILICON*, R.E. Pritchard, M.J. Ashwin, R.C. Newman and J.H. Tucker, *IRC for Semiconductor Materials, Imperial College, London SW7 2BZ, UK*
- A-I.2 9:05-9:40 - Invited - *FORMATION OF H₂ MOLECULES IN CRYSTALLINE SILICON*, A.W.R. Leitch, *Department of Physics, University of Port Elizabeth, PO Box 1600, Port Elizabeth 6000, South Africa*; J. Weber and V. Alex, *Max-Planck-Institut für Festkörperforschung, Heisenbergstrasse 1, 70569 Stuttgart, Germany*
- A-I.3 9:40-10:00 *FORMATION PROCESS AND SITES OF HYDROGEN MOLECULES IN CRYSTALLINE SILICON*, K. Murakami, N. Fukata, K. Ishioka*, M. Kitajima*, H. Haneta** and S. Fujimura***, *Institute of Materials Science, University of Tsukuba, Tennoudai 1-1-1, Tsukuba, Ibaraki 305, Japan*; *National Research Institute of Metals; **National Institute for Research in inorganic Materials; ***Fujitsu Ltd.
- A-I.4 10:00-10:20 *EFFECTS OF CRYSTAL DISORDER ON THE MOLECULAR HYDROGEN FORMATION IN SILICON*, M. Kitajima, K. Ishioka, *National Research Institute for Metals, Tsukuba, 305 Japan*; S. Tateishi, K. Nakanoya, N. Fukata, K. Murakami, *University of Tsukuba, Tsukuba, 305 Japan*, S. Fujimura, *Fujitsu Ltd., Kawasaki, 211 Japan* and S. Hishita, *National Institute for Research in Inorganic Materials, Tsukuba, 305 Japan*
- 10:20-10:50 BREAK

SESSION II - H₂ Molecules in Silicon, Part 2

Chairperson: R.E. Pritchard, *IRC for Semiconductor Materials, Imperial College, London, UK*

- A-II.1 10:50-11:20 - Invited - *ENERGETICS AND VIBRATIONAL FREQUENCIES OF INTERSTITIAL H₂ MOLECULES IN SEMICONDUCTORS*, Ch.G.Van de Walle, *Xerox PARC, 3333 Coyote Hill Road, Palo Alto CA 94304, USA*
- A-II.2 11:20-11:40 *MOLECULAR HYDROGEN TRAPS WITHIN SILICON*, B. Hourahine, R. Jones, *Department of Physics, The University of Exeter, Exeter, EX4 4QL, UK*; S. Oberg, *Department of Mathematics, University of Lulea, Lulea, 97187, Sweden*; R.C. Newman, *Imperial College, Prince Consort Road, London, SW7 2BZ, UK*; P.R. Briddon, *Department of Physics, The University of Newcastle upon Tyne, Newcastle upon Tyne, NE1 7RU, UK*; E. Roduner *Institut für Physikalische Chemie, Pfaffenwaldring 55, 70569 Stuttgart, Germany*
- A-II.3 11:45-12:05 *INTERACTION OF HYDROGEN (DEUTERIUM) MOLECULES WITH INTERSTITIAL OXYGEN ATOMS IN SILICON*, Y.P. Markevich, M. Suezawa, *Institute for Materials Research, Tohoku University, Sendai 980-77, Japan*, and L.I. Murin, *Institute of Solid State and Semiconductor Physics, Minsk 220072, Belarus*
- 12:05-13:30 LUNCH

SYMPOSIUM A

Tuesday June 16, 1998

Mardi 16 juin 1998

Afternoon

Après-midi

SESSION III - Interaction of Hydrogen with defects, Part 1

Chairperson: R. Jones, *The University of Exeter, UK*

- A-III.1 13:30-14:05 - Invited - HYDROGEN-DEFECT INTERACTIONS IN SILICON, S.K. Estreicher, *J.L. Hastings, Physics Dept., Texas Tech University, Lubbock TX 19409, USA and P.A. Fedders, Physics Dept., Washington University, St. Louis MO 63130, USA*
- A-III.2 14:05-14:40 - Invited - HYDROGEN TRAPPED AT INTRINSIC DEFECTS AND LIGHT IMPURITIES IN SILICON, B. Bech Nielsen and K. Bonde Nielsen, *Institute of Physics and Astronomy, University of Aarhus, 8000 Aarhus C, Denmark*
- A-III.3 14:40-15:00 VACANCY-HYDROGEN DEFECTS IN Ge AND Si-Ge, J. Coomer, R. Jones, *Department of Physics, The University of Exeter, Exeter, EX4 4QL, UK; S. Oberg, Department of Mathematics, University of Lulea, Lulea 97187, Sweden; P.R. Briddon, Department of Physics, The University of Newcastle upon Tyne, Newcastle upon Tyne, NE1 7RU, UK*
- A-III.4 15:00-15:20 HYDROGEN-ENHANCED OXYGEN CLUSTERING IN SILICON, L.L. Murin and V.P. Markevich, *Institute of Solid State and Semiconductor Physics, Minsk 220072, Belarus; J. Lennart Lindström and T. Hallberg, Linköping University, Department of Physics and Measurement Technology, 581 83 Linköping, Sweden*
- 15:20-15:50 BREAK

SESSION IV - Interaction of Hydrogen with Defects, Part 2

Chairperson: B. Bech. Nielsen, *University of Aarhus, Denmark*

- A-IV.1 15:50-16:25 - Invited - PHOTOLUMINESCENCE CHARACTERISATION OF HYDROGEN-RELATED DEFECTS IN SILICON, A.N. Safonov and E.C. Lightowers, *Physic department, King's College London, Strand, London WC2R 2LS, UK*
- A-IV.2 16:25-16:45 THE C-TYPE DEFECT ON Si (001) AS A HYDROGEN-VACANCY COMPLEX, T. Miyazaki, T. Uda*, and K. Terakura, *JRCAT-NAIR, *JRCAT-ATP, Higashi 1-1-4, Tsukuba 305, Japan*
- A-IV.3 16:45-17:05 DIPOLAR INTERACTIONS BETWEEN UNPAIRED Si BONDS AT THE (111)Si/SiO₂ INTERFACE, A. Stesmans and B. Nouwen, *Department of Physics, University of Leuven, 3001 Leuven, Belgium*
- A-IV.4 17:05-17:45 IONIZATION AND TRAPPING OF HYDROGEN NEAR SiO₂ INTERFACES, V.V. Afanas'ev and A. Stesmans, *Department of Physics, University of Leuven, 3001 Leuven, Belgium*
- A-IV.5 17:45-18:05 LOW TEMPERATURE HYDROGENATION OF DISLOCATED Si, O.V. Feklisova, E.B. Yakimov, N.A. Yarykin, *IPTM RAS, Chernogolovka 142432, Russia; J. Weber, MPI-FKF, 70506 Stuttgart Germany*

SYMPOSIUM A

Wednesday June 17, 1998
 Mercredi 17 juin 1998

Afternoon
 Après-midi

SESSION V - Hydrogen in processing

Chairperson: K. Bond Nielsen, University of Aarhus, Denmark

- A-V.1 14:00-14:35 - Invited - SURFACE DOPANT CONCENTRATION USING THE SURFACE CHARGE PROFILER METHOD (SCP) : CHARACTERIZATION OF HYDROGEN AND METALLIC CONTAMINATION IN SILICON, A. Danel, F. Tardif, Gressi-Leti-CEA/G, 38054 Grenoble Cedex 9, France, and G. Kamarinos, ENSERG, LPCS, BP 257, 38016 Grenoble Cedex 1, France
- A-V.2 14:35-14:55 HYDROGEN ENHANCEMENT OF THERMALLY INDUCED INTERFACE DEGRADATION IN THERMAL Si/SiO₂ TRACED BY ELECTRON SPIN RESONANCE, A. Stesmans and V.V. Afanas'ev, Department of Physics, University of Leuven, 3001 Leuven, Belgium
- A-V.3 14:55-15:15 INFLUENCE OF HYDROGEN DESORPTION ON THE GENERATION OF DEFECTS IN LEPECVD, C. Rosenblad, H.R. Deller, H. von Känel, ETH Zürich, 8093 Zürich, Switzerland and P. Schroeter, Neu-Technikum Buchs, 9471 Buchs, Switzerland
- A-V.4 15:15-15:35 HYDROGEN PASSIVATION OF NEWLY DEVELOPED EMC-MULTI-CRYSTALLINE SILICON, R. Einhaus, F. Duerinckx, E. Van Kerschaver, J. Szlufcik, IMEC vzw, Kapeldreef 75, 3001 Leuven, Belgium; F. Durand, P.J. Ribeyron, J.C. Duby, EPM-MADYLAM, BP 95, 38402 St-Martin d'Heres, France; D. Sarit, G. Goer, G.N. Le, PHOTOWATT, 38402 Bourgoin Jallieu, France; S. Martinuzzi, J.F. Gatto, I. Périchaud, LPDSO, Case 231, 13397 Marseille, France
- A-V.5 15:35-15:55 HYDROGEN PASSIVATION OF MULTICRYSTALLINE SILICON SOLAR CELLS. R. Lüdemann, Fraunhofer Institute for Solar Energy Systems, Oltmannsstr. 22, 79100 Freiburg, Germany
- A-V.6 16:15-16:35 DOPING OF CRYSTALLINE N-SILICON WITH HYDROGEN BY AN ELECTROCHEMICAL METHOD, A. Robles, D. Vega, J.R. Ares, P. Martin, J.E. Fernandez, and C. Sanchez, Dpto. Fisica de Materiales, Facultad de Ciencias, Universidad Autonoma de Madrid, Cantoblanco 28049 Madrid, Spain
- A-V.7 16:35-16:55 HYDROGEN REDISTRIBUTION AND ENHANCED THERMAL DONOR FORMATION AT POST IMPLANTATION ANNEALING OF P-TYPE HYDROGEN IMPLANTED CZOCHRALSKI SILICON, A.G. Ulyashin, A.I. Ivanov, I.A. Khorunzhii, Device Performance Department, Belarussian State Polytechnical Academy, Skaryn Ave. 65, 220027, Minsk, Belarus and R. Job, W.R. Fahrner, Department of Electrical Engineering, University of Hagen, Haldener Str.182, 58084 Hagen, Germany and F.F. Komarov, A.C. Kamyshan, Department of Physical Electronics, Belarussian State University, Kurchatova 4, 220064, Minsk, Belarus
- A-V.8 16:55-17:15 PROCESSES LEADING TO DELAMINATION OF THIN LAYERS IN HYDROGEN IRRADIATED SILICON, V.P. Popov, V.F. Stas, Institute of Semiconductor Physics, Novosibirsk, Russia

17:15-17:35 BREAK

POSTER SESSION I

17:35-18:30 See programme of this poster session p. A-7.

SYMPOSIUM A

Thursday June 18, 1998

Morning

Jeu di 18 juin 1998

Matin

SESSION VI: Transition-Metal-Hydrogen Complexes, Part 1

Chairperson: Ch.G. Van de Walle, Xerox Parc, Palo Alto, USA

A-VI.1 8:30-9:05 - Invited - THEORY OF TRANSITION METAL HYDROGEN COMPLEXES IN SILICON, R. Jones, A. Resende, Department of Physics, The University of Exeter, Exeter, EX4 4QL, UK; S. Oberg, Department of Mathematics, University of Luleaa, Luleaa, 97187, Sweden; P.R. Briddon, Department of Physics, The University of Newcastle upon Tyne, Newcastle upon Tyne, NE1 7RU, UK

A-VI.2 9:05-9:40 - Invited - STRUCTURE SENSITIVE SPECTROSCOPY OF TRANSITION-METAL-HYDROGEN COMPLEXES IN SILICON, M. Stavola, M.J. Evans, M.G. Weinstein, S.J. Uffring and G.D. Watkins, Physics Department, Lehigh University, Bethlehem, PA 18015, USA

A-VI.3 9:40-10:00 GOLD-HYDROGEN COMPLEXES IN SILICON, L. Rubaldo, A.R. Peaker, D.K. Maude and J.C. Portal, Laboratoire des Champs Magnétiques Intenses MPI-CNRS, 25, ave des Martyrs, Grenoble 38042 France; P. Deixler, I.D. Hawkins and J.H. Evans-Freeman, University of Manchester, Institute of Science and Technology, Manchester M60 1QD, UK; L. Dobaczewski, Institute of Physics, Aleja Lotnikow 32/46, 02-668 Warsaw, Poland

A-VI.4 10:00-10:20 DLTS ANALYSIS OF NICKEL-HYDROGEN COMPLEX DEFECTS IN SILICON, M. Shiraishi*, ***, J.-U. Sachse*, H. Lemke** and J. Weber*, *Max-Planck-Institut für Festkörperforschung, Postfach 80 06 65, 70506 Stuttgart, Germany, **TU Berlin, Institut für Werkstoffe der Elektrotechnik, Jebensstraße 1, 1063 Berlin, Germany, ***SONY Corporation Research Center, 174 Fujitsuka-cho, Hodogaya-ku, 240 Yokohama, Japan

10:20-10:50 BREAK

SESSION VII: Transition-Metal-Hydrogen Complexes, Part 2

Chairperson: S.K. Estreicher, Texas Tech University, Lubbock, USA

A-VII.1 10:50-11:25 - Invited - SIMILARITIES IN THE ELECTRICAL PROPERTIES OF TRANSITION-METAL HYDROGEN COMPLEXES, J.-U. Sachse, E.Ö. Sveinhjörnsson*, N. Yarykin** and J. Weber, Max-Planck-Institut f. Festkörperforschung, 70569 Stuttgart, Germany; *Department of Microelectronics ED, Chalmers University of Technology, 41296 Göteborg, Sweden; **Institute of Microelectronics Technology RAS, 142432 Chernogolovka, Russia

A-VII.2 11:25-12:05 HYDROGEN-RHODIUM COMPLEXES IN SILICON, J. Weber, S. Knack, Max-Planck-Institut für Festkörperforschung, Postfach 80 06 65, 70506 Stuttgart, Germany; H. Lemke, TU Berlin, Institut für Werkstoffe der Elektrotechnik, Jebensstraße 1, 1063 Berlin, Germany

A-VII.3 11:45-12:05 A FIRST PRINCIPLE STUDY OF TRANSITION METAL HYDROGEN COMPLEXES IN SILICON, A. Resende, R. Jones, Department of Physics, The University of Exeter, Exeter EX4 4QL, UK; S. Oberg, Department of Mathematics, University of Luleaa, Luleaa, 97187, Sweden; P.R. Briddon, Department of Physics, The University of Newcastle upon Tyne, Newcastle upon Tyne NE1 7RU, UK

12:05-13:30 LUNCH

SYMPOSIUM A

Thursday June 18, 1998
Jeudi 18 juin 1998

Afternoon
Après-midi

SESSION VIII - Alternative passivation mechanisms

Chairperson: A.N. Safonov, *King's College London, UK*

A-VIII.1 13:30-14:05 - *Invited* - ELECTRICAL CHARACTERIZATION OF DEFECT REACTIONS IN SILICON: THE CASE OF COPPER, T. Heiser, A.A. Istratov,* C. Flink* and E.R. Weber*, *University Louis Pasteur, Laboratoire de Physique et Applications des Semiconducteurs, CNRS, BP 20, 67037 Strasbourg Cedex 2, France, *Department of Material Science and Mineral Engineering, University of California at Berkeley, California 94720, USA*

A-VIII.2 14:05-14:25 COPPER-RELATED COMPLEXES IN SILICON, S.K. Estreicher, *Physics Department, Texas Tech University, Lubbock, TX 79409, USA*

A-VIII.3 14:25-14:45 CADMIUM-LITHIUM DEFECTS IN SILICON, C.A. Frehill, M.O. Henry, E. McGlynn, *School of Physical Sciences, Dublin City University, Collins Avenue, Dublin 9, Ireland and E.C. Lightowers, A. Safonov, Department of Physics, Kings College, Strand, London WC2R 2LS, UK*

14:45-15:15 BREAK

SESSION IX - Proton Implantation

Chairperson: J. Weber, *Max-Planck-Institut, Stuttgart, Germany*

A-IX.1 15:15-15:45 - *Invited* - THE EVOLUTION OF DEFECT STRUCTURES IN SILICON AFTER LOW-TEMPERATURE HYDROGEN IMPLANTATION, K. Bonde Nielsen and B. Bech Nielsen, *Institute of Physics and Astronomy, University of Aarhus, 8000 Aarhus C, Denmark*

A-IX.2 15:45-16:05 C-H COMPLEX IN SI OBSERVED AT LOW TEMPERATURES, L. Hoffmann, E. Lavrov, and B. Bech Nielsen, *Institute of Physics and Astronomy, University of Aarhus, 8000 Aarhus C, Denmark*

A-IX.3 16:05-16:40 - *Invited* - SELF-INTERSTITIALS AND SELF-INTERSTITIALS RELATED COMPLEXES IN IRRADIATED SILICON, B.N. Mukashev, Kh.A. Abdullin, Yu.V. Gorelkinskii, S.Zh. Tokmoldin, *Institute of Physics and Technology, MS-AS RK,480082, Almt'y, 82, Kasakistan*

A-IX.4 16:40-17:00 ULTRADENSE HYDROGEN. THE STATE OF IMPLANTED HYDROGEN AFTER SEGREGATION IN PREFORMED CAVITIES, G.F. Cerofolini, SGS - Thomson Microelectronics, 20041 Agrate MI, Italy and F. Corni, S. Frabboni, C. Nobili, G. Ottaviani, and R. Tonini, *Dipartimento di Fisica dell'Università, 41100 Modena MO, Italy*

END OF SYMPOSIUM A

SYMPOSIUM A

**SYMPOSIUM A
POSTER SESSION**

Wednesday June 17, 1998
Mercredi 17 juin 1998

Afternoon
Après-midi

Poster Session I
17:35 - 18:30

- A/P1 *MUSR OF POROUS SILICON, P. Harris, S. Bayliss, S. Cottrell, Solid State Research Centre, De Montfort University, Leicester, UK*
- A/P2 *THE ROLE OF HYDROGEN IN THE FORMATION OF POROUS STRUCTURES IN SILICON, V. Parkhutik, Technical University of Valencia, Spain and E. Andrade, Institute of Physics, National Autonomous University of Mexico*
- A/P3 *SELF-ORGANIZATION AS A MEANS TO SUPPRESS AND CONTROL DEFECT FORMATION IN SILICON, A. Yu. Gubenko, Moscow Institute of Electronics and Mathematics, ul. Kuusinen 25, Moscow 125252, Russia*
- A/P4 *PRODUCTION AND PROPERTIES OF MONOCRYSTALLINE SILICON DOPED BY OSMIUM, G. Nurkuziev, Physical-Technical Institute, Mavljanova str. 2B, 700084, Tashkent, Uzbekistan; A.A. Paiziev, Positron Physics Laboratory, Institute of Electronics, Academgorodok, 700143, Tashkent, Uzbekistan*
- A/P5 *HYDROGENATION OF EPITAXIAL SI-LAYERS GROWN BY CVD, T. Vermeulen, J. Poortmans, M. Caymax, J. Nijs, R. Mertens, Interuniversity Micro-Electronics Centre (IMEC), Kapeldreef 75, 3001 Leuven, Belgium and C. Vinckler, Katholieke Universiteit Leuven, Dept. of Chemistry, Celestijnenlaan 200F, Leuven, Belgium*
- A/P6 *INFRARED ABSORPTION STUDY OF A DX-LIKE HYDROGEN-RELATED CENTER IN SILICON, V.P. Markevich, M. Suezawa, Institute for Materials Research, Tohoku University, Sendai 980-77, Japan and L.I. Murin, Institute of Solid State and Semiconductor Physics, Minsk 220072, Belarus*
- A/P7 *THE INFLUENCE OF SECONDARY RADIATION DEFECTS ON THE REDISTRIBUTION OF IMPURITY IONS DUE TO HIGH TEMPERATURE PROTON IRRADIATION, V.V. Kozlovski, V.N. Lomasov, State Technical University, St. Petersburg 195251, Russia*
- A/P8 *EFFECT OF SHALLOW DONORS INDUCED BY HYDROGEN ON P-N JUNCTIONS, S. Godey, E. Nisoenzok, CNRS-CERI, 3A rue de la Férollerie, 45071 Orléans Cedex, France; D. Schmidt, Royal Institute of Technology, Electrum 229, 16440 Kista, Sweden; J.F. Barbot, L.M.P., UMR 6630 CNRS, SP2MI, Bd3 Téléport 2, 86960 Futuroscope Cedex, France*
- A/P9 *DONOR CENTER FORMATION IN HYDROGEN IMPLANTED SILICON, V.P. Popov, V.F. Stas, I.V. Antonova V.I. Obodnikov, Institute of Semiconductor Physics, Novosibirsk, Russia, E.P. Neustroev, Yakutsk State University, Yakutsk, Russia*
- A/P10 *TIGHT-BINDING MOLECULAR DYNAMICS CALCULATION OF STABLE POSITIONS AND MIGRATION PATHS OF HYDROGEN, A.P. Mukhtarov, Z.M. Khakimov, F.T. Umarova, Sh.M. Makhkamov, N.A. Tursunov, Institute of Nuclear Physics, Ylughbek, 702 132 Tashkent, Uzbekistan*

E-MRS'98 SPRING MEETING



SYMPOSIUM B

Light Emission from Silicon: Progress Towards Si-based Optoelectronics

Symposium Organizers

- F. PRIOLO** INFM and Dept of Physics, University of Catania, Catania, Italy
- J. LINNROS** Dept of Electronics, Royal Inst. of Technology, Kista-Stockholm, Sweden
- L. CANHAM** Defence Research Agency, Malvern, UK

The assistance provided by

HIGH VOLTAGE ENGINEERING EUROPA B.V.

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is acknowledged with gratitude.

SYMPOSIUM B

Tuesday, June 16, 1998
Mardi 16 juin 1998

Morning
Matin

SESSION I - Light Emitting Silicon: Different Approaches Towards One Goal

- | | | | |
|-------|-------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | 8:45-9:30 | | WELCOME ADDRESS, F. Priolo, J. Linnros, L. Canham |
| B-I.1 | 9:00-9:30 | - Invited - | RADIATIVE PROCESSES IN BULK CRYSTALLINE SILICON, G. Davies, <i>Physics Department, King's College London, Strand, London WC2R 2LS, UK</i> |
| B-I.2 | 9:30-10:00 | - Invited - | DIFFERENT Er CENTERS IN Si AND THEIR USE FOR ELECTROLUMINESCENT DEVICES, W. Jantsch, S. Lanzerstorfer, L. Palmetshofer, M. Stepikhova and H. Preier, <i>Inst. f. Halbleiterphysik, Johannes Kepler Universität, 4040 Linz, Austria</i> |
| B-I.3 | 10:00-10:30 | - Invited - | THE INTEGRATION OF NANOSCALE SILICON LIGHT EMITTERS WITH ELECTRONIC CIRCUITRY, P.M. Fauchet, <i>Department of Electrical Engineering, University of Rochester, Rochester NY 14627, USA</i> |
| | 10:30-11:00 | | BREAK |
| B-I.4 | 11:00-11:30 | - Invited - | MANIPULATION OF SILICON NANOCRYSTAL SIZE, INTERFACE PASSIVATION AND ARRAY MORPHOLOGY, H.A. Atwater, K.S. Min, E.A. Boer, D. Santamore, M.L. Brongersma* and A. Polman*, <i>Thomas J. Watson Laboratory of Applied Physics, California Institute of Technology, Pasadena CA 91125, USA; *FOM Institute of Atomic and Molecular Physics, Kruislaan 407, 1098 SJ Amsterdam, The Netherlands</i> |
| B-I.5 | 11:30-12:00 | - Invited - | VISIBLE LIGHT EMISSION FROM Si/SiO ₂ SUPERLATTICES IN OPTICAL MICROCAVITIES, D.J. Lockwood, <i>Institute for Microstructural Sciences, National Research Council, Ottawa, ON K1A 0R6, Canada</i> |
| B-I.6 | 12:00-12:30 | - Invited - | LIGHT EMISSION FROM β FeSi ₂ , K.J. Reeson, J.S. Sharpe, C. McKinty, D. Leong, M.A. Harry and K.P. Homewood, <i>School of Electronic Engineering, Information Technology and Mathematics, University of Surrey, Guildford, Surrey, GU2 5XH, UK</i> |
| | 12:30-14:00 | | LUNCH |

SYMPOSIUM B

Tuesday June 16, 1998

Mardi 16 juin 1998

Afternoon

Après-midi

SESSION II - Si - Based Alloys and Multilayers

- B-II.1** 14:00-14:15 *IS THERE STILL ANY HOPE FOR BLUE LUMINESCENCE FROM SILICON ?*, L. Rebohle, J. v. Borany, A. Markwitz and W. Skorupa, Institute of Ion Beam Physics and Materials Research, Forschungszentrum Rossendorf e.V., POB 510119, 01314 Dresden, Germany
- B-II.2** 14:15-14:30 *α-SiO THIN FILM LIGHT EMITTING DEVICES FOR Si-BASED OPTOELECTRONICS*, M.C. Rossi, S. Salvatori, F. Galluzzi, Dip. Ingegneria Elettronica, Università di Roma Tre, V. Vasca Navale 84, 00146 Roma, Italy and R. Janssen, M. Stutzmann, Walter Schottky Institut, Technical University of Munich, Am Coulombwall, Garching, Germany
- B-II.3** 14:30-15:00 - Invited - *ELECTRICAL AND OPTICAL CHARACTERIZATION OF LIGHT EMITTING DEVICES BASED ON Si/CaF₂ MULTILAYERS*, A.G. Nassiopoulou, V. Tsakiri, V. Ioannou-Sougleridis, P. Photopoulos, S. Menard*, F. Bassani* and F. Arnaud d'Avitaya*, Institute of Microelectronics, NCSR "Demokritos", P.O. Box 60288, 15310 Aghia Paraskevi Attikis, Athens, Greece ; *Centre de Recherche sur les Mécanismes de la Croissance Cristalline, CNRS, Campus de Luminy, case 913, 13288 Marseille Cedex 9, France
- B-II.4** 15:00-15:15 *FIRST-PRINCIPLES OPTICAL PROPERTIES OF Si/CaF₂ MULTI-QUANTUM WELLS*, E. Degoli and S. Ossicini, Istituto Nazionale per la Fisica della Materia (INFM) and Dipartimento di Fisica, Università di Modena, via Campi 213/A, 41100 Modena, Italy
- B-II.5** 15:15-15:30 *AMORPHOUS Si/INSULATOR MULTILAYERS GROWN BY MOLECULAR BEAM EPITAXY AND ELECTRON CYCLOTRON RESONANCE PLASMA TREATMENT*, J.M. Buribeau, D.J. Lockwood, Z.H. Lu, H.J. Labbé, S.J. Rolfe and G.I. Sproule, Institute for Microstructural Sciences, National Research Council Canada, Ottawa, K1A 0R6, Canada
- B-II.6** 15:30-15:45 *RADIATIVE EMISSION PROPERTIES OF α-SiN: H BASED ALLOYS, NANOMETRIC MULTILAYERS AND LIGHT EMITTING DEVICES*, E. Giorgis, C.F. Pirri, INFN and Dept. of Physics, Polytechnic of Turin, C.so Duca degli Abruzzi 24, 10129 Torino, Italy and C. Vinegoni, L. Pavesi, INFN and Dept. of Physics, University of Trento, Via Sommarive 14, 38050 Povo, Italy
- B-II.7** 15:45-16:00 *SCATTERING-CONTROLLED RECOMBINATION OF Δ₇-LH INDIRECT EXCITONS AND ENHANCED QUANTUM CONFINED STARK EFFECT IN TENSILELY STRAINED Si_{1-x}C_x/Si(001) QUANTUM WELLS*, S. Fukatsu, M. Sugawara and D. Hippo, Dept. of Pure and Applied Sciences, The University of Tokyo, 3-8-1 Komaba, Meguro-ku, Tokyo 153, Japan; K. Brunner and K. Eberl, Max-Planck-Institut für Festkörperforschung, Heisenbergstrasse 1, 70569 Stuttgart, Germany
- B-II.8** 16:00-16:15 *ULTRAFast CARRIER DYNAMICS IN WIDE-GAP HYDROGENATED AMORPHOUS SILICON*, J. Kudrna, P. Maly, S. Surendran, Faculty of Mathematics and Physics, Charles University Prague, Czech Republic, I. Pelant, J. Stuchlik, Institute of Physics, Academy of Sciences of the Czech Republic, Prague; A. Poruba, Faculty of Chemistry, Technical University, Brno, Czech Republic

16:15-16:30

BREAK

POSTER SESSION I

16:30-19:00

See programme of this poster session p. B-10 to B-12 (B-I/P1 to B-I/P42).

SYMPOSIUM B

Wednesday June 17, 1998
 Mercredi 17 juin 1998

Afternoon
 Après-midi

SESSION III - Erbium Doping of Silicon

- B-III.1 14:00-14:30 - *Invited* - LUMINESCENCE AT 1.54 μm FROM Er DOPED CRYSTALLINE SILICON: PHYSICS AND DEVICES, G. Franzó, S. Coffa, CNR-IMETEM, Stradale Primosole 50, 95121 Catania, Italy and F. Priolo, INFN and Dipartimento di Fisica, Università di Catania, Corso Italia 57, 95129 Catania, Italy
- B-III.2 14:30-14:45 EXCITATION MECHANISM OF Er IN Si STUDIED WITH A FREE-ELECTRON LASER, T. Gregorkiewicz, I. Tsimperidis, D.T. Xuan Thao, and C.A.J. Ammerlaan, Van der Waals - Zeeman Institute, University of Amsterdam, Valckenierstraat 65, 1018 XE Amsterdam, The Netherlands
- B-III.3 14:45-15:00 EPR STUDY OF ERBIUM-IMPURITY COMPLEXES IN SILICON, J.D. Carey, R.C. Barklie, J.F. Donegan, Department of Physics, Trinity College, Dublin 2, Ireland; F. Priolo, INFN and Dipartimento di Fisica, Università di Catania, Italy; G. Franzó and S. Coffa, CNR-IMETEM, Stradale Primosole 50, 95121 Catania, Italy
- B-III.4 15:00-15:15 THE INFLUENCE OF OXYGEN ON THE LATTICE SITES OF RARE EARTHS IN SILICON, U. Wahl, A. Vantomme, G. Langouche, University of Leuven, Instituut voor Kern- en Stralingsfysica, Celestijnenlaan 200 D, 3001 Leuven, Belgium; J.G. Correia and the ISOLDE Collaboration, CERN, 1211 Genève 23, Switzerland
- B-III.5 15:15-15:30 DESIGN, PREPARATION, PURIFICATION, CHARACTERIZATION AND UTILIZATION OF DOPANT PRECURSORS FOR CVD OF Si:Er, W.S. Rees, Jr. and O. Just, School of Chemistry & Biochemistry and School of Materials Science & Engineering and Molecular Design Institute, Georgia Institute of Technology, Atlanta GA 30332-0400, USA and L.C. Kimerling and M.T. Morse, Department of Materials Science and Engineering, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge MA 02139, USA
- B-III.6 15:30-15:45 1.54 μm LIGHT EMISSION FROM Er/O AND Er/F DOPED Si LAYERS GROWN BY MBE, W.-X. Ni, C.-X. Du, K.B. Joelsson, G. Pozina, G.V. Hansson, Dept of Physics, Linköping University, 581 83 Linköping, Sweden
- B-III.7 15:45-16:00 EXCITATION CROSS-SECTION AND LIFETIME OF THE EXCITED STATE OF ERBIUM IONS IN AVALANCHING LIGHT-EMITTING Si:Er:O DIODES, N.A. Sobolev, Ioffe Physicotechnical Institute, 194021 St. Petersburg, Russia, A.M. Emel'yanov and K.F. Shtel'makh, St. Petersburg State Technical University, 195251 St. Petersburg, Russia, P.E. Khakushev and M.A. Trishenkov, Scientific and Manufacturing Enterprise "Orion", 111123 Moscow, Russia

16:00-16:30 BREAK

SESSION IV - Nanocrystals: Band Structure

- B-IV.1 16:30-17:00 - *Invited* - STRUCTURAL DEPENDENCE OF OPTICAL BANDGAPS OF Si NANOCCLUSERS, C. Delerue, M. Lannoo and G. Allan, IEMN - Dept. ISEN, 41 boulevard Vauban, 59046 Lille Cedex, France
- B-IV.2 17:00-17:15 INFLUENCE OF THE NON-PARABOLICITY ON THE SIZE-ENERGY RELATIONSHIP IN A QUANTUM BOX: A ONE-BAND DESCRIPTION, N. Maillard, P. Valiron, Laboratoire d'Astrophysique, UMR 5571-CNRS, Observatoire de Grenoble-Université Joseph Fourier, BP 53, 38041 Grenoble Cedex 9, France and G. Fishman, Laboratoire de Spectrométrie Physique-UMR C5588, Université Joseph Fourier-Grenoble 1-CNRS, BP 87, 38402 Saint-Martin d'Hères Cedex, France
- B-IV.3 17:15-17:30 SOFT X-RAY EMISSION STUDIES OF THE ELECTRONIC STRUCTURE OF SILICON NANOCRYSTALS, T. van Buuren, L.N. Dinh, L.L. Chase, L.J. Terminello, Lawrence Livermore National Laboratory, Livermore, CA 94550, USA

17:30-18:00 BREAK

SYMPOSIUM B

18:00-19:30

OPEN DISCUSSION on

"Si-based Optoelectronics: how can we get there?"

with an introduction by:

P. Malinverni, European Commission, DG III, EC, Brussels, on:

"European programmes on Si-based optoelectronics"

Kick off by: Leigh Canham

All participants are welcome to contribute to a fruitful discussion.

SYMPOSIUM B

Thursday June 18, 1998
Jeudi 18 juin 1998

Morning
Matin

SESSION V - Porous Si: Optoelectronic Properties

- B-V.1** **8:30-9:00** - *Invited* - **FIELD-INDUCED FUNCTIONS OF POROUS Si AS A CONFINED SYSTEM**, Nobuyoshi Koshida, Tokyo University of A & T, Koganei, Tokyo 184, Japan
- B-V.2** **9:00-9:15** **CHARACTERISATION OF ITO/POROUS SILICON LED STRUCTURES**, K. Molnar, T. Mohacsy, P. Varga, E. Vazsonyi, K. Ferencz* and I. Barsony, Research Institute for Technical Physics and Materials Science - MFA, *Research Institute for Solid State Physics - SZFKI, P.O. Box 49, 1525 Budapest, Hungary
- B-V.3** **9:15-9:30** **STRONGLY NONLINEAR PHOTOLUMINESCENCE INTENSITY INCREASE IN POROUS SILICON FILMS UNDER HIGH EXCITATION CONDITIONS**, H. Koyama, L. Tsybeskov, and P.M. Fauchet, Department of Electrical Engineering, University of Rochester, Rochester NY 14627, USA
- B-V.4** **9:30-9:45** **TWO-PHOTON-EXCITED PHOTOLUMINESCENCE FROM POROUS Si**, J. Diener, Y.R. Shen, Department of Physics, University of California, Materials Sciences Division, Berkeley CA 94720-7300, USA; D.I. Kovalev, G. Poltiski and F. Koch, Technische Universität München, Physik-Department E16, 85747 Garching, Germany
- B-V.5** **9:45-10:00** **LOCAL ORDER IN LIGHT EMITTING POROUS Si POROUS SILICON STUDIED BY XEOL AND TEY**, G. Dalba, N. Daldosso, P. Fornasini, R. Grisenti, Dipartimento di Fisica dell'Università di Trento, 38050 Povo, Italy; F. Rocca, CeFSA, Centro CNR-ITC di Fisica degli Stati Aggregati, 38050 Povo, Italy and A. Flank and P. Lagarde, LURE bât. 209 D, 91405 Orsay, France
- 10:00-10:30** **BREAK**

SESSION VI - Nanocrystals: Light Emission

- B-VI.1** **10:30-10:45** **PHOTOLUMINESCENCE AND OPTICAL GAIN IN Si⁺ - IMPLANTED SiO₂**, P. Knappek, K. Luterova, I. Pelant, Institute of Physics, Academy of Sciences of the Czech Republic, Cukrovarnická 10, 16253 Praha, Czech Republic; J. Valenta, J. Dian, Charles University, Faculty of Mathematics and Physics, Dept. of Chemical Physics and Optics, Ke Karlovu 3, 12116 Praha, Czech Republic; D. Muller, J.J. Grob, Laboratory PHASE (UPR 292-CNRS), 23 rue du Loess, 67037 Strasbourg, France; J.-L. Rehspringer, IPCMS, Groupe des Matériaux Inorganiques, 23 rue du Loess, 67037 Strasbourg, France; B. Hönerlage, IPCMS, Groupe d'Optique Nonlinéaire et d'Optoélectronique, 23 rue du Loess, 67037 Strasbourg, France
- B-VI.2** **10:45-11:00** **DOSE DEPENDENCE OF ROOM TEMPERATURE PHOTOLUMINESCENCE FROM Si IMPLANTED SiO₂**, S.M. Cheylan, N.B. Manson and R.G. Elliman, Research School of Physical Sciences and Engineering, Institute of Advanced Studies, Australian National University, Canberra, ACT 0200, Australia
- B-VI.3** **11:00-11:15** **SIZE DEPENDENT PHOTOLUMINESCENCE OF Si NANOCCLUSERS PRODUCED BY LASER ABLATION**, L. Patrone, D. Nelson, V. Safarov, M. Sentis and W. Marine, Groupement Interdisciplinaire Ablation Laser et Applications, UMR CNRS 6631 et UMR CNRS 6594, Faculté des Sciences de Luminy, Case 901, Marseille, France
- B-VI.4** **11:15-11:30** **FROM MOLECULAR PRECURSORS TO NANOCRYSTALS : PHOTOLUMINESCENCE FROM SILSESQUOXANES (SiO_{1.5}R_nmL_m)**, Ch. Ossadnik, S. Veprek, Institute for Chemistry of Inorganic Materials, Technical University Munich, Lichtenbergstr. 4, 85747 Garching, Germany and H. Marsmann, E. Rikowski, Institute for Inorganic Chemistry, University Paderborn, 33095 Paderborn, Germany
- B-VI.5** **11:30-11:45** **OPTICAL PROPERTIES OF Si FILMS PRODUCED BY SIZE-SELECTED CLUSTER BEAM DEPOSITION**, V. Paillard and M.A. Laguna, Lab. de Physique des Solides, Univ. P. Sabatier, 31062 Toulouse Cedex 4, France, M. Ehbrecht, B. Kohn and F. Huiskens, Max-Planck-Institut, Bunsenstr. 10, 37073 Göttingen, Germany
- B-VI.6** **11:45-12:00** **ROOM-TEMPERATURE SiGe LIGHT EMITTING DIODES**, L. Vescan, ISI, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany and T. Stoica, National Institute of Material Physics, POB Mg.7, Magurele, Bucharest, Romania

SYMPOSIUM B

- B-VI.7** *12:00-12:15* *C-INDUCED Ge DOTS: ENHANCED LIGHT OUTPUT FROM Si-BASED NANO-STRUCTURES, O.G. Schmidt, S. Schieker, K. Eberl, Max-Planck-Institut für Festkörperforschung, Heisenbergstraße 1, 70569 Stuttgart, Germany and N.Y. Jin-Phillip, F. Phillip, Max-Planck-Institut für Metallforschung, Heisenbergstraße 1, 70569 Stuttgart, Germany*
- B-VI.8** *12:15-12:30* *BLACKBODY EMISSION IN NANOSTRUCTURED MATERIALS, P. Roura, J. Costa, GRM, Dept. D'Enginyeria Industrial, Universitat de Girona, 17071 Girona, Spain; M. Lopez-de Miguel, B. Garrido and J.R. Morante, Dept. d'Electronica, Facultat de Fisica and E. Bertran, Dept. Fisica Aplicada i Optica, Facultat de Fisica, Universitat de Barcelona, 08028 Barcelona, Spain*
- 12:30-14:00* **LUNCH**

SYMPOSIUM B

Thursday June 18, 1998
Jeudi 18 juin 1998

Afternoon
Après-Midi

SESSION VII - Porous Si: Ambient Effects

- B-VII.1** 14:00-14:30 - *Invited* - **STABILIZATION AND FUNCTIONALIZATION OF POROUS SILICON THROUGH LEWIS ACID MEDIATED HYDROSILYLATION**, J.M. Buriak, M.J. Allen, Department of Chemistry, Purdue University, West Lafayette, IN 47907-1393, USA
- B-VII.2** 14:30-14:45 **PHOTOLUMINESCENCE QUENCHING OF POROUS SILICON IN ORGANIC SOLVENTS: EVIDENCE FOR DIELECTRIC EFFECTS**, S. Fellah, R.B. Wehrspohn, N. Gabouze, E. Ozanam and J.-N. Chazalviel, UDTs, BP 399, Algiers, Algeria and LPMC, CNRS-Ecole Polytechnique, 91128 Palaiseau, France
- B-VII.3** 14:45-15:00 **TUNABILITY OF THE PHOTOLUMINESCENCE IN POUROUS SILICON DUE TO DIFFERENT DIELECTRIC ENVIRONMENTS**, H.A. Lopez, S.P. Duttagupta, and P.M. Fauchet, Materials Science Program and Department of Electrical Engineering; and X.Linda Chen and S.A. Jenekhe, Department of Chemical Engineering, University of Rochester, Rochester NY 14627, USA
- B-VII.4** 15:00-15:15 **LIQUID SENSORS BASED ON POROUS SILICON OPTICAL WAVEGUIDES**, H.F. Arrand, T.M. Benson, University of Nottingham, Nottingham, UK; A. Loni, Defence Evaluation and Research Agency, Malvern, UK; M.G. Krueger, M. Thoenissen, H. Lueth, Institut fuer Schicht und Ionentechnik (ISI), Germany; S. Kershaw, British Telecom Laboratories, Ipswich, UK

15:15-15:45 **BREAK**

SESSION VIII - Light Emitting Silicides

- B-VIII.1** 15:45-16:00 **GROWTH AND STRUCTURAL CHARACTERIZATION OF SEMICONDUCTING Ru₂Si**, D. Lenssen, H.L. Bay, St. Mesters, C. Dieker, D. Guggi, R. Carius, S. Mandl, Institut für Schicht- und Ionentechnik, Forschungszentrum Jülich, 52425 Jülich, Germany
- B-VIII.2** 16:00-16:15 **CORRELATION BETWEEN STRUCTURAL AND OPTICAL PROPERTIES IN ION BEAM SYNTHESIZED β -FeSi₂ PRECIPITATES**, M.G. Grimaldi, Phys. Dept., Catania, Italy; S. Coffa, IMETEM, Catania, Italy; F. Marabelli, Phys. Dept., Pavia, Italy; L. Miglio, Mat. Sc. Dept., Milano, Italy; V. Meregallo, MPI-FKF, Stuttgart, Germany
- B.VIII.3** 16:15-16:30 **FABRICATION OF p-Si/ β -FeSi₂ BALLS/n-Si STRUCTURES BY MBE AND THEIR ELECTRICAL AND OPTICAL PROPERTIES**, T. Suemasu, M. Tanaka, T. Fujii, K. Takakura and F. Hasegawa, Inst. of Mater. Sci., Univ. of Tsukuba, 1-1-1 Tennohdai, Tsukuba, Ibaraki 305-8573, Japan

POSTER SESSION II

16:30-19:00 See programme of this poster session p. B-13 to B-15 (posters B-II/P1 to B-II/P44).

SYMPOSIUM B

Friday June 19, 1998
Vendredi 19 juin 1998

Morning
Matin

SESSION IX - Porous Si: Microcavities

- B-IX.1** 8:30-9:00 - *Invited* - **ALL POROUS SILICON MICROCAVITIES: PHYSICS AND APPLICATIONS**, L. Pavesi, INFN and Dept. of Physics, University of Trento, Via Sommarive 14, 38050 Povo, Italy
- B-IX.2** 9:00-9:15 **LIGHT EMISSION IN PERIODICALLY MICROSTRUCTURED POROUS SILICON**, E.K. Squire, P.A. Snow, P.St.J. Russell, Optoelectronics Group, Department of Physics, University of Bath, Bath BA2 7AY, UK, and L.T. Canham, A.J. Simons, C.L. Reeves, DERA, St. Andrews Road, Malvern, WR14 3PS, UK
- B-IX.3** 9:15-9:30 **IMPROVEMENT OF THE LUMINESCENCE IN P-TYPE AS-PREPARED OR DYE IMPREGNATED POROUS SILICON MICROCAVITIES**, S. Setzu, S. Létant, R. Romestain, J.C. Vial, Laboratoire de Spectrométrie Physique, Université J. Fourier-CNRS (UMR 5588), B.P. 87, 38402 St Martin d'Hères cedex, France
- B-IX.4** 9:30-9:45 **INTERFERENCE FILTERS FROM POROUS SILICON WITH LATERALLY VARYING WAVELENGTH OF REFLECTION**, D. Hunkel, R. Butz, R. Arens-Fischer and H. Lüth, Institute of Thin Film and Ion Technology (ISI), Research Centre Jülich, 52425 Jülich, Germany
- B-IX.5** 9:45-10:00 **PHOTOLUMINESCENCE STUDY OF POROUS Si MULTILAYERS**, Z.H. Xiong, S. Yuan, Z.M. Jiang, J. Qin, L.S. Liao, X.M. Ding, X.Y. Hou and Xun Wang, Surface Physics Laboratory, Fudan University, Shanghai 200433, China

10:00-10:30 **BREAK**

SESSION X - Er Doping of Si-Based Materials

- B-X.1** 10:30-10:45 **LUMINESCENCE FROM MBE-GROWN Er:O-DOPED SiGe**, A. Sticht, E. Neufeld, A. Luigart, K. Brunner, G. Abstreiter, Walter Schottky Institut, TU München, Am Coulombwall, 85748 Garching, Germany
- B-X.2** 10:45-11:00 **Er-DOPED EDGE EMITTING DEVICES WITH A SiGe WAVEGUIDE**, C.-X. Du, W.-X. Ni, K.B. Joelsson, F. Duteil, G.V. Hansson, Department of Physics, Linköping University, 581 83 Linköping, Sweden
- B-X.3** 11:00-11:15 **LASER ANNEALED Er-DOPED a-Si:H THIN FILMS**, M.J.V. Bell, L.A.O. Nunes, A.R. Zanatta, Instituto de Física de Sao Carlos, Universidade de Sao Paulo, P.O. Box 369, 13560-970 Sao Carlos, S.P. Brazil
- B-X.4** 11:15-11:30 **ROOM-TEMPERATURE ELECTROLUMINESCENCE FROM ERBIUM-DOPED AMORPHOUS HYDROGENATED SILICON**, O.B. Gusev, M.S. Bresler, E.I. Terukov, K.D. Tsendin and I.N. Yassievich, AF Ioffe Physico-Technical Institute, Politeknicheskaya 26, 194021 St Petersburg, Russia
- B-X.5** 11:30-11:45 **LUMINESCENCE PROPERTIES OF Er³⁺ IN SiN/PS:Er**, S. Uekusa, T. Inomata, Meiji university, Department of Electrical Engineering, Kawasaki, Japan

11:45-12:00 **Award presentation**

12:00-12:30 **Gordon Davies: Symposium Summary**

12:30 **LUNCH**

END OF SYMPOSIUM B

SYMPOSIUM B

SYMPOSIUM B
POSTER SESSIONS

Tuesday June 16, 1998

Mardi 16 juin 1998

Afternoon

Après-midi

Poster Session I

16:30-19:00

Erbium Doping

- B-1/P1 *ELECTRICAL AND OPTICAL PROPERTIES OF DEEP TRAPS IN Er- DOPED LPE SILICON*, A. Cavallini, B. Fraboni, INFN and Dept. of Physics, University of Bologna, viale Bertini Pichat 6/2, Bologna, Italy; S. Pizzini, S. Binetti, INFN and Dept. of Materials Science, University of Milano, via Emanuelli 15, Milano, Italy; L. Lazzarini, G. Salviati, CNR-MASPEC, Via Chiavari 18/A, Parma, Italy
- B-1/P2 *ERBIUM DOPED SILICON EPILAYERS GROWN BY LIQUID PHASE EPITAXY*, S. Binetti, A. Cavallini*, A. Dellafiore, B. Fraboni*, E. Grilli, M. Guzzi, S. Pizzini, S. Sanguinetti, Istituto Nazionale di Fisica della Materia, INFN, Dipartimento di Scienza dei Materiali, Via Emanuelli, 15, 20126 Milano, Italy; *Dipartimento di Fisica, Via Bertini Pichat 6/2 Bologna, Italy
- B-1/P3 *1.54 μ m EMISSION OF PULSED LASER DEPOSITED SiO₂:Er FILMS ON Si*, S. Lanzerstorfer, J. Pedarnig, A. Gunasekaran, D. Bäuerle and W. Jantsch, Johannes Kepler Universität, Linz, Austria
- B-1/P4 *DISLOCATION-RELATED LUMINESCENCE IN Er-IMPLANTED SILICON*, N.A. Sobolev, O.B. Gusev and E.I. Shek, Ioffe Physicotechnical Institute, St. Petersburg 194021, Russia; V.I. Vdovin and T.G. Yugova, Institute for Chemical Problems of Microelectronics, Moscow 109017, Russia; A.M. Emel'yanov, St. Petersburg State Technical University, St. Petersburg 195251, Russia
- B-1/P5 *EXAFS ANALYSIS OF Er SITES IN Er-O AND Er-F CO-DOPED CRYSTALLINE Si*, A. Terrasi and F. Priolo, INFN and University of Catania, Corso Italia 57, 95129 Catania, Italy; G. Franzó and S. Coffa, CNR-IMETEM, Stradale Primosole 50, 95121 Catania, Italy; F. D'Acapito and S. Mobilio, ESRF-GILDA CRG, 38043 Grenoble, France
- B-1/P6 *LUMINESCENCE FROM ERBIUM IN SiO₂ GROWN BY MOLECULAR EPITAXY*, J. Wan, C. Sheng, D.W. Gong, F. Lu, Y.L. Fan, F. Lin, L.S. Liao and Xun Wang, Surface Physics Laboratory, Fudan University, Shanghai 200433, China
- B-1/P7 *NEW EFFICIENT MECHANISM OF EXCITATION OF ELECTROLUMINESCENCE FROM ERBIUM IONS IN CRYSTALLINE SILICON*, M.S. Bresler, O.B. Gusev, P.E. Pak, N.A. Sobolev and I.N. Yassievich, AF Ioffe Physico-Technical Institute, Politeknicheskaya 26, 194021 St Petersburg, Russia
- B-1/P8 *IMPACT EXCITATION OF THE f - f EMISSION IN CLUSTERS Er - O IN SILICON*, L.G. Gerchikov and V.F. Masterov, St. Petersburg State Technical University, Politeknicheskaya 29, St. Petersburg 195251, Russia
- B-1/P9 *EPITAXIAL GROWTH OF LIGHT EMITTING Si:Er LAYERS BY MBE WITH SUBLIMATING SOURCES*, L.K. Orlov, A.V. Potapov, S.V. Ivin, Institute for Physics of Microstructures RAS, GSP-105, 603600, Nizhny Novgorod, Russia; V.G. Shengurov, D.V. Schengurov, N.L. Orlova, PTRI NNSU, Nizhny Novgorod, Russia; T.G. Yugova, Giredmet, Moscow, Russia; E. Steinman, ISSP RAS, Chernogolovka, Russia

Porous Silicon

- B-1/P10 *INITIAL STAGES OF POROUS SILICON FORMATION ON PLASMA- MODIFIED Si SURFACES*, S. Fellah, N. Gabouze, F. Ozanam, J.-N. Chazalviel, A. Dakhia and Y. Belkacem, UDTs, BP 399, Algiers, Algeria and LPMC, CNRS-Ecole Polytechnique, 91128 Palaiseau, France
- B-1/P11 *LASER ASSISTED CVD OF SILICON OXIDE LAYERS*, P. Paiva, F. Madelino and O. Conde, Physics Department, University of Lisbon, Campo Grande, Ed. C1, 1700 Lisboa, Portugal; G. Lamedica, M. Balucani and A. Ferrari, INFN and Electronics Eng. Dept., University of Rome, Via Eudossiana 18, 00184 Roma, Italia

SYMPOSIUM B

- B-I/P12** COMPARATIVE STUDY OF THE OXIDATION OF THIN POROUS SILICON LAYERS STUDIED BY REFLECTOMETRY, SPECTROSCOPIC ELLIPSOMETRY AND SECONDARY ION MASS SPECTROSCOPY, M. Fried, O. Polgar, T. Lohner, Res. Inst. for Tech. Phys. and Mater. Sci., POB 49, 1525 Budapest, Hungary, S. Strehlike, C. Levy-Clement, CNRS-LPSB, 1 Place A. Briand, 92195, Meudon, France
- B-I/P13** PHOTOLUMINESCENCE FROM PHOTOCHEMICALLY ETCHED POROUS SILICON, E.M. Qureshi, J.C. Barnard and R.E. Palmer, Nanoscale Physics Research Laboratory, School of Physics and Astronomy, University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK, and K.W. Kolasinski, School of Chemistry, University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK
- B-I/P14** DIELECTRIC PERMITTIVITY OF POROUS SILICON, S.P. Zimin, E.P. Komarov, Yaroslavl State University, Sovetskaya str. 14, Yaroslavl, 150000 Russia
- B-I/P15** TIME RESOLVED PHOTOLUMINESCENCE STUDY OF THE RED EMISSION IN NANOPOROUS SiGe ALLOYS, S. Lehib, H.J. von Bardeleben, J. Cernogora, J.L. Fave and J. Roussel, Groupe de Physique des Solides, Universités Paris 6&7, UMR 75-88 au CNRS, 2 place Jussieu, 75005 Paris Cedex 05, France
- B-I/P16** XPS CHARACTERIZATION OF STAIN-ETCHED POROUS SILICON FILMS, R. Zanoni, Università di Roma "La Sapienza", G. Righini, CNR, Area della Ricerca di Roma, L. Schirone and G. Sotgiu, Università di Roma Tre, 00100 Roma, Italy
- B-I/P17** MORPHOLOGY CONTROL OF STAIN ETCHED POROUS SILICON, L. Schirone, G. Sotgiu and F. Rallo, Università di Roma Tre, Via della Vasca Navale 84, 00146 Roma, Italy
- B-I/P18** IN-SITU SURFACE-ROUGHNESS MEASUREMENTS DURING THE PREPARATION OF CHEMICALLY ETCHED POROUS SILICON, P.L. Harris, S.C. Bayliss, T. Bardrick, R. Hillman, R. Cubitt, Solid State Research Centre, De Montfort University, Leicester, UK
- B-I/P19** VISIBLE LUMINESCENCE FROM PHOTO-CHEMICALLY ETCHED SILICON, Naokatsu Yamamoto and Hiroshi Takai, Takai Lab., Tokyo Denki University, 2-2 Kanda Nishikicyo, Chiyodaku, Tokyo 101, Japan
- B-I/P20** ANALYSIS OF GASES EVOLVED BY POROUS SILICON DURING ILLUMINATION IN DIFFERENT ATMOSPHERES, P. Martín, J.F. Fernandez and C. Sanchez, Dpto. Fisica de Materiales, Facultad de Ciencias, Universidad Autonoma de Madrid, Cantoblanco 28024 Madrid, Spain
- B-I/P21** EFFICIENT LUMINESCENCE FROM POROUS SILICON, A. Daami, G. Bremond, Laboratoire de Physique de la Matière (UMR CNRS 5511), 20 Av. A. Einstein, 69621 Villeurbanne Cedex, France; J. Stalmans, J. Poortmans, IMEC, Kapeldreef 75, 3001 Leuven, Belgium
- B-I/P22** ELECTROCHEMICAL BEHAVIOUR OF POROUS SILICON MULTI-LAYERS, R. Guerrero-Lemus, F.A. Ben-Hander, J.D. Moreno, R.J. Martin-Palma, J.M. Martinez-Duart, M.L. Marcos and J. Gonzalez-Velasco, Dpto de Fisica Aplicada and Dpto. de Quimica, C-IX, Univ. Autonoma de Madrid, 28049 Madrid, Spain; P. Gomez-Garrido, Dpto. Fisica Fundamental y Experimental, Univ. La Laguna, 38201 S/C de Tenerife, Spain
- B-I/P23** DEPTH DEPENDENCE OF PHOTOLUMINESCENCE AND CHEMICAL BONDING IN POROUS SILICON, D. Dimova-Malinovska, M. Sendova-Vassileva, M. Kamenova, CL SENES, Bulg. Acad. Sci., 1784 Sofia, Bulgaria, and A. Kakanakova-Georgieva, Ts. Marinova, IGIC, Bulg. Acad. Sci., 1113 Sofia, Bulgaria
- B-I/P24** LIGHT EMISSION FROM POROUS SILICON SUBJECTED TO DIFFERENT SURFACE TREATMENTS, N.I. Klyui, V.G. Litovchenko, A.G. Rozhin, A.B. Romanyuk, Institute of Semiconductor Physics, 45 prospect Nauki, 252028 Kiev, Ukraine; Y.P. Piryatinskii, Institute of Physics, 46 prospect Nauki, 252022 Kiev, Ukraine; V.A. Semenovich, Institute for Superhard Materials, 2 Avtozavodskaya str., 254074 Kiev, Ukraine
- B-I/P25** A THEORETICAL MODEL OF THE PHOTOSENSITIVITY OF POROUS SILICON, B.S. Sokolovskii, Institute of Applied Physics of I. Franko State University, 290044 Lviv, Ukraine and L.S. Monastyrskii, I. Franko State University, 290005 Lviv, Ukraine
- B-I/P26** EFFECT OF OXYGEN IMPLANTATION ON IONOLUMINESCENCE OF POROUS SILICON, M. Kulik, T.J. Ochalski, J. Liskiewicz, J. Zuk, Institute of Physics, Maria Curie-Skłodowska University, Pl. Marii Curie-Skłodowskiej 1, 20-031 Lublin, Poland and A.P. Kobzev, Join Institute of Nuclear Research, Dubna, Russia
- B-I/P27** ELLIPSOMETRIC STUDY OF REFRACTIVE INDEX ANISOTROPY IN POROUS SILICON, H. Krzyzanowska, M. Kulik and J. Zuk, Institute of Physics, Maria Curie-Skłodowska University, Pl. Marii Curie-Skłodowskiej 1, 20-031 Lublin, Poland
- B-I/P28** RAMAN SCATTERING IN THICK FREE-STANDING POROUS SILICON FILMS, A.V. Andrianov and J. Morgan, Univ. of Nottingham, Department Electrical and Electronic Engineering, University Park, Nottingham NG7 2RD, UK; G. Polisski and F. Koch, Techn. Univ. Munich, Physics Department E-16, James-Frank-Strasse, 85747 Garching, Germany

SYMPOSIUM B

- B-1/P29** EFFECT OF (STRESS) PREANNEALING OF C_z-Si SUBSTRATE ON PHOTOLUMINESCENCE OF POROUS SILICON, A. Misiuk, Institute of Electron Technology, Al. Lotnikow 46, 02 - 668 Warsaw, Poland; H.B. Surma, A. Brzozowski, A. Wnuk and M. Pawlowska, Institute of Electronic Materials Technology, Wolczynska 133, 01-919 Warsaw, Poland
- B-1/P30** LUMINESCENT PROPERTIES OF HYDROGENATED POROUS SILICON, Y. Yerokhov, I. Melnyk, O. Izgin, Semiconductor Electronic Department, State University "Lviv Polytechnic", Box 1050, 290045 Lviv, Ukraine
- Light Emission from Si: Author Approaches
- B-1/P31** INTRINSIC ELECTROLUMINESCENCE FROM In(III) OXIDE-Si HETEROSTRUCTURES AT ROOM TEMPERATURE IN STRONG INJECTION LEVEL CONDITIONS, A. Malik, E. Fortunato and R. Martins, CEMOP-UNINOVA/FCT-UNL, 2825 Monte de Caparica, Portugal
- B-1/P32** ELECTROLUMINESCENCE FROM Si-Si_{1-x}Ge_x/Si_{1-x}C_x-Si p-i-n DIODES STRUCTURES, K.B. Joelsson, W.-X. Ni, G. Pozina, C.-X. Du, G.V. Hansson, Department of Physics and Measurement Technology, Linköping University, 581 83 Linköping, Sweden
- B-1/P33** PHOTOLUMINESCENCE AND X-RAY CHARACTERIZATION OF Si/Si_{1-x}Ge_x MULTIPLE QUANTUM WELLS, T.P. Sidiki, A. Rühm*, W.-X. Ni**, G.V. Hansson**, C.M. Sotomayor Torres, Institut für Materialwissenschaften, Fachbereich Elektrotechnik, BUGH Wuppertal, 42097 Wuppertal, Germany, *Institut für Materialwissenschaften, Fachbereich Physik, BUGH Wuppertal, 42285 Wuppertal, Germany, **Department of Physics, Linköping University, 581 83 Linköping, Sweden
- B-1/P34** SHORT PERIOD (Si_{1-x}Ge_x)_p SUPERLATTICES: PHOTOLUMINESCENCE AND ELECTRON MICROSCOPY STUDY, N. Pinto, M. De Crescenzi, R. Murri, F. Tombolini, Dipartimento di Matematica e Fisica, Università di Camerino, 62032 Camerino, Italy; M. Casalbón, INFN Dipartimento di Fisica, Università di Roma Tor Vergata, Roma, Italy; G. Barucca, G. Majni, INFN Dipartimento di Scienze della Terra e dei Materiali - Università di Ancona, Ancona, Italy
- B-1/P35** VISIBLE PHOTOLUMINESCENCE FROM a-Si/SiO₂ SUPERLATTICES FABRICATED BY UHV EVAPORATION, K. Nishimoto, H.A. Durand, K. Etoh, K. Ito, Japan Aviation Electronics Industry Ltd, Central Research Laboratory, Musashino 3-1-1, Akishima-shi, Tokyo 196-8555, Japan
- B-1/P36** MULTIPERIOD Si/SiO₂/Ge LAYERED STRUCTURE FORMATION THROUGH CHEMICAL BOND MANIPULATION, K. Prabhakaran, T. Ogino, NTT Basic Research Laboratories, 3-1 Morinosato Wakamiya, Atsugi-shi, Kanagawa 243-01, Japan, and T. Matsumoto, Y. Masumoto, Single Quantum Dot Project, ERATO, JST, 5-9-9 Tohkohdai, Tsukuba, Japan
- B-1/P37** STRONG VISIBLE PHOTOLUMINESCENCE IN AMORPHOUS SiO_x-H PREPARED BY THERMAL EVAPORATION OF SiO POWDER, H. Rinnert, M. Vergnat, G. Marchal, Laboratoire de Physique des Matériaux, (U.M.R. au C.N.R.S. No.7556), Université Henri Poincaré Nancy 1, B.P. 239, 54506 Vandoeuvre-lès-Nancy Cedex, France; A. Burneau, Laboratoire de Chimie Physique pour l'Environnement, (U.M.R. au C.N.R.S. No.7564), Université Henri Poincaré Nancy 1, 405 rue de Vandoeuvre, 54506 Villers-lès-Nancy Cedex, France
- B-1/P38** VISIBLE PHOTOLUMINESCENCE AND ITS MECHANISM FROM DEFERENT STOICHIOMETRIC a-SiO_x-H THIN FILMS, M. Zhu, Graduate School, Academia Sinica, PO Box 3908, Beijing, China; R.B. Wehrspohn, Lab. PMC, Ecole Polytechnique, 91128 Palaiseau, France and C. Godet, Lab. PICM, Ecole Polytechnique, 91128 Palaiseau, France
- B-1/P39** ROOM TEMPERATURE VISIBLE PHOTOLUMINESCENCE FROM Ar⁺- AND Ge⁺-ION IMPLANTED Si₃N₄ AND SiO₂-N_x FILMS, I.E. Tyschenko, G.A. Kachurin, Institute of Semiconductor Physics, Novosibirsk, 630090, Russia; L. Rébohle, W. Skorupa, Institute of Ion Beam Physics and Materials Research, Research Center Rossendorf, Inc. POB 510119, 01314 Dresden, Germany
- B-1/P40** XPS INVESTIGATION OF a-Si:H THIN FILMS AFTER LIGHT SOAKING, A. Toneva, T. Marinova* and V. Krastev*, Central Laboratory of Solar Energy and New Energy Sources, Bulgarian Academy of Sciences, Sofia 1784, Bulgaria; *Institute of General and Inorganic Chemistry, Bulgarian Academy of Sciences, Sofia 1113, Bulgaria
- B-1/P41** LIGHT EMISSION FROM SILICON P-N JUNCTION AT AVALANCHE AND SECONDARY BREAKDOWN, T. Puritis, J. Kaupuzs, Riga Technical University, Lab. of Semicond. Phys., 1a Kalku str., 1658 Riga, Latvia
- B-1/P42** ELECTRONIC, OPTICAL AND TRANSPORT PROPERTIES OF SEMICONDUCTING IRON DISILICIDE, A.B. Filonov, V.E. Borisenko, Belarusian State University of Informatics and Radioelectronics, P. Browka 6, 220027 Minsk, Belarus and W. Henrion, H. Lange, Hans-Meitner Institut, Rudower Chaussee 5, 12389 Berlin, Germany

SYMPOSIUM B

Thursday June 18, 1998
 Jeudi 18 juin 1998

Afternoon
 Après-Midi

Poster Session II
 16:30-19:00

Nanocrystals

- B-II/P1** *THE ORIGIN OF BLUE AND RED LUMINESCENCE IN Si NANOCRYSTALS GROWN BY ION-IMPLANTATION, S. Guha, Naval Research Laboratory, Washington DC, USA*
- B-II/P2** *PHOTOLUMINESCENCE AND ELECTROLUMINESCENCE INVESTIGATIONS AT Ge-RICH SiO₂ LAYERS, L. Rebohle, J. von Borany, I.E. Tyschenko, W. Skorupa, FZ Rossendorf e.V., Dresden, Germany; H. Fröh, TU Dresden, Germany*
- B-II/P3** *THE EFFECT OF ANNEALING UNDER HYDROSTATIC PRESSURE ON THE VISIBLE PHOTOLUMINESCENCE FROM Si⁺-ION IMPLANTED SiO₂ FILMS, I.E. Tyschenko, G.A. Kachurin, Institute of Semiconductor Physics, Novosibirsk, 630090, Russia, A. Misiuk, Institute of Electron Technology, Al.Lotnikow 46, Warsaw, Poland, L. Rebohle, W. Skorupa, Institute of Ion Beam Physics and Materials Research, Research Center Rossendorf, Inc. POB 510119, 01314 Dresden, Germany*
- B-II/P4** *EXCESS Si CONCENTRATION DEPENDENCE OF THE PHOTO-LUMINESCENCE OF Si NANOCCLUSERS IN SiO₂, FABRICATED BY ION IMPLANTATION, T. Shimizu-Iwayama, Aichi University of Education, Igaya-cho, Kariya-shi, Aichi 448-8542, Japan and D.E. Hole, P.D. Townsend, University of Sussex, Brighton BN1 9QH, UK*
- B-II/P5** *DEPENDENCE ON SUBSTRATE TEMPERATURE OF EFFICIENCY OF CO-SPUTTERED Si/SiO₂ LAYERS, S. Charvet, R. Madelon B. Rizk, LERMAT, unité CNRS 6004, 6 Bd Maréchal Juin, 14050 Caen cedex, France, and B. Garrido, O.M. Lopez, A. Pérez-Rodríguez, J.R. Morante, EME, Departament d'Electronica, Universitat de Barcelona, Avda Diagonal 645-647, 08028 Barcelona, Spain*
- B-II/P6** *PHOTOLUMINESCENCE OF Ge NANOSTRUCTURES GROWN BY MBE ON SILICON (118) SUBSTRATE, M. Serpentin, G. Bremond, Laboratoire de Physique de la Matière (UMR CNRS 5511), INSA, 20 Av. A. Einstein, 69621 Villeurbanne Cedex, France; M. Abdullah, I. Berbezier, CRMC2-CNRS, Campus de Luminy, Case 913, 13288 Marseille Cedex 9, France*
- B-II/P7** *ROOM TEMPERATURE VISIBLE PHOTOLUMINESCENCE FROM CRYSTALLIZED NANO-Si THIN FILMS, Wei Wu, J.B. Xu, Department of Electronic Engineering, The Chinese University of Hong Kong, Hong Kong; M.X. Wang, X.F. Huang, K.J. Chen, W. Li, J. Xu, Department of Physics, Nanjing University, Nanjing 210093, China*
- B-II/P8** *THE MECHANISM OF THE INTRINSIC 'RED' PHOTOLUMINESCENCE FROM nc-Si/SiO₂ THIN FILMS, S. Veprek, T. Wirschem, Ch. Ossadnik, Institute for Chemistry of Inorganic Materials, Technical University Munich, Lichtenbergstr. 4, 85747 Garching, Germany and S.M. Prokes, W.E. Carlos, Naval Research Laboratory, Washington D.C. 20375, USA*
- B-II/P9** *CATHODOLUMINESCENCE PROPERTIES OF SILICON NANOCRYSTALLITES EMBEDDED IN SILICON OXIDE THIN FILMS, T. Inokuma, Y. Kurata and S. Hasegawa, Dept. of Electrical & Computer Engineering, Faculty of Engineering, Kanazawa Univ., 2-40-20 Kodatsuno, Kanazawa 920, Japan*
- B-II/P10** *LIGHT EMISSION FROM NANOCRYSTAL Si EMBEDDED IN CaF₂ EPILAYERS ON Si (111): EFFECT OF RAPID THERMAL ANNEALING, M. Watanabe, T. Maruyama, S. Ikeda, Research Center for Quantum Effect Electronics, Tokyo Institute of Technology, 2-12-1 O-okayama, Meguro-ku, Tokyo 152-8552, Japan*
- B-II/P11** *ELLIPSOMETRIC SPECTROSCOPY STUDY OF PHOTOLUMINESCENT Si/SiO₂ SYSTEMS OBTAINED BY MAGNETRON SPUTTERING, S. Charvet, R. Madelon, F. Goubilleau, R. Rizk, LERMAT, Unité CNRS 6004, 6 Bd du Maréchal Juin, 14050 Caen cedex, France*
- B-II/P12** *LOCALIZED ELECTRON STATES INDUCED BY DOPING AMORPHOUS SILICON, G. Allan, C. Delerue, M. Lannoo, Institut Supérieur d'Electronique et de Microélectronique du Nord, Département ISEN, BP 69, 59652 Villeneuve d'Ascq Cedex, France*
- B-II/P13** *A LIGHT EMITTING DIODE STRUCTURE BASED ON Si NANOCRYSTALS FORMED BY IMPLANTATION INTO THERMAL OXIDE, N. Lalic and J. Linnros, Department of Electronics, Royal Institute of Technology, Electrum 229, 164 40 Kista-Stockholm, Sweden*
- B-II/P14** *LIGHT EMISSION FROM NANOSTRUCTURED SILICON FILMS PRODUCED BY PULSED LASER ABLATION, Q.F. Bobrenok, A.V. Bulgakov, M.R. Predtechensky, Institute of Thermophysics SB RAS, prosp. Lavrentyev 1, 630090 Novosibirsk, Russia*

SYMPOSIUM B

B-II/P15 PHOTOLUMINESCENCE AND PARAMAGNETIC DEFECTS IN SILICON-IMPLANTED DIOXIDE LAYERS, V. Ya. Bratus, M. Ya. Valakh, A.A. Konchits, V.A. Yukhimchuk, Institute of Semiconductor Physics, NASU, 45 pr. Nauky, 252028 Kiev, Ukraine; P.L.F. Hemment, Department of Electronic and Electrical Engineering, University of Surrey, Guildford, Surrey, UK and T. Komoda, MEW Ltd, Osaka, Japan

Rare Earth Doping

B-II/P16 ERBIUM IN SILICON-GERMANIUM QUANTUM WELLS, M.Q. Huda, A. Scholes, A. Naveed, J. Hartung, J.H. Evans-Freeman, A.R. Peaker, Centre for Electronic Materials, University of Manchester Institute of Science and Technology, Manchester M60 1QD, UK; D.C. Houghton, SiGe Microsystems Inc., Ottawa, Canada, KIA OR6; J.M. Fernandez, B.A. Joyce, Imperial College, London SW7 2BZ, UK; C. Jeynes, W.P. Gillin, University of Surrey, Guildford, Surrey, UK

B-II/P17 OPTICAL PROPERTIES OF EUROPIUM DOPED SILICON NANOCRYSTALS, J. Qi, T. Matsumoto, M. Tanaka and Y. Masumoto, Single Quantum Dot Project, ERATO, Japan, Science and Technology Corporation, Tokodai 5-9-9, Tsukuba, Ibaraki 3002635, Japan

B-II/P18 OPTICAL PROPERTIES OF NEODYMIUM INCORPORATED IN POROUS SILICON, R. M'gahaieth, J.C. Vial, M. Haouari, H. Maaref, Faculté des Sciences de Monastir, Route de l'Environnement, 5000 Monastir, Tunisia

B-II/P19 COMPARISON STUDY OF DONOR FORMATION IN HOLMIUM, DYSPROSIUM, AND ERBIUM-IMPLANTED SILICON, Vadim V. Emtsev, Valentin V. Emtsev, D.S. Poloskin, E.I. Shek, and N.A. Sobolev, Ioffe Physicotechnical Institute, 194021 St. Petersburg, Russia

B-II/P20 LOCAL ENVIRONMENT SYMMETRY OF ERBIUM IMPURITY ATOMS IN AMORPHOUS HYDROGENATED SILICON, V.Kh. Kudovarova, A.N. Kuznetsov, E.I. Terukov, A.F. Ioffe Physico-Technical Institute, Russian Academy of Sciences, 194021 St. Petersburg, Russia; V.F. Masterov, F.S. Nasredinov, P.P. Seregin, St. Petersburg State Technical University, 195251 St. Petersburg, Russia

B-II/P21 ROOM-TEMPERATURE PHOTOLUMINESCENCE OF AMORPHOUS HYDROGENATED SILICON CARBIDE DOPED WITH ERBIUM, V.Kh. Kudovarova, E.I. Temkov, A.N. Kuznetsov, Ioffe Physico-Technical Institute, 194021 St. Petersburg, Russia; W. Finns, Hahn-Meitner Institut, Rudower Chaussee 5, 12489 Berlin, Germany; G. Weiser and H. Kuehne, Fachbereich Physik Philipps-Universität Marburg, Renthof 5, 35032 Marburg, Germany

B-II/P22 PHOTOLUMINESCENCE FROM POROUS SILICON ELECTROCHEMICALLY DOPED WITH ERBIUM, L. Dolgvi, S. Volchek, N. Kazuchits, V. Yakovtseva, V. Bondarenko, Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus; and L. Tsybeskov, H. Lopez, G. Grom and Ph. Fauchet, University of Rochester, Rochester NY, USA

B-II/P23 LUMINESCENCE FROM POROUS SILICON DOPED WITH ERBIUM-ITTEBIUM COMPLEXES, V. Filippov, V. Kuznetsova, V. Homenko, P. Pershukovich, Belarussian Academy of Sciences, F. Skorina 70, 220072 Minsk, Belarus; V. Yakovtseva, Belarussian State University of Informatics and Radioelectronics, Brovka 6, 220027 Minsk, Belarus, and M. Balucani, V. Bondarenko, G. Lamedica and A. Ferrari, INFN UNIT E6 Università 'La Sapienza' di Roma, Via Eudossiana 18, 00184 Roma, Italy

B-II/P24 ON THE ORIGIN OF 1.5 μ m LUMINESCENCE IN POROUS SILICON COATED WITH SOL-GEL DERIVED ERBIUM DOPED Fe_2O_3 FILMS, N.V. Gaponenko, A.V. Mydryi, O.V. Sergeev, V.E. Borisenko, Belarusian State University of Informatics and Radioelectronics, P. Browki str. 6, 220027 Minsk, Belarus; M. Stepihova, L. Palmetshofer, W. Jantsch, Institut für Halbleiterphysik, Johannes-Kepler-Universität Linz, 4040 Linz-Auhof, Austria; J.C. Pivin, Centre de Spectrométrie Nucléaire et de Spectrométrie de Masse, Bâtiment 108, 91405 Orsay Campus, France; A.S. Baran, A.I. Rat'ko, Institute of General and Inorganic Chemistry, Surganova str. 9, 220027 Minsk, Belarus

B-II/P25 ROOM TEMPERATURE GREEN PHOTOLUMINESCENCE FROM Er IONS IN AMORPHOUS SiN FILMS, A.R. Zanatta, L.A.O. Nunes, M.J.V. Bell, Instituto de Física de Sao Carlos, Universidade de Sao Paulo, P.O. Box 369, 13560-970 Sao Carlos, S.P. Brazil

B-II/P26 1.54 μ m EMITTING ERBIUM-DOPED α -Si:H FILMS FABRICATED BY STANDARD PECVD USING METAL-ORGANIC Er(HFA)₃*DME, N.A. Feoktistov, V.G. Golubev, A.V. Medvedev, Yu.A. Nikulin, A.B. Pevtsov, Ioffe Physico-Technical Institute, 194021 St. Petersburg, Russia and N.I. Gorshkov, D.N. Suglobov, Chlopin Radium Institute, 194021, St. Petersburg, Russia

B-II/P27 LOW-TEMPERATURE ANNEALING EFFECT ON 1.54 μ m EMISSION OF Er-DOPED α -Si:H, A.A. Andreev, V.G. Golubev, I.V. Korkin, A.V. Medvedev, V.B. Voronkov, Ioffe Physico-Technical Institute, 194021 St. Petersburg, Russia

Porous Silicon

B-II/P28 OPTICAL WAVEGUIDES IN POROUS SILICON PRE-PATTERNED BY LOCALISED NITROGEN IMPLANTATION, H. Arrand, T.M. Benson, P. Sewell, University of Nottingham, Nottingham, UK; A. Loni, Defence Evaluation and Research Agency, Malvern, UK

SYMPOSIUM B

- B-II/P29 INTEGRATED WAVEGUIDES BASED ON OXIDIZED POROUS SILICON:FORMATION AND OPTICAL PROPERTIES**, M. Balucani, V. Bondarenko, L. Franchina, G. Lamedica and A. Ferrari, INFN Unit E6, University 'La Sapienza', Rome, Italy; and N. Vorozov, V. Yakovtseva, Belarussian State University of Informatics and Radioelectronics, Brovki 6, 220027 Minsk, Belarus; and V. Filippov, A. Tomov, Institute of Physics, Belarussian Academy of Sciences, F. Skorina 70, 220072 Minsk, Belarus
- B-II/P30 THE ORIGIN OF LIQUID-PHASE ELECTROLUMINESCENCE FROM POROUS SILICON**, J.D. Moreno, R. Guerrero-Lemus, R.J. Martín-Palma, J.M. Martínez-Duart, M.L. Marcos and J. Gonzalez-Velasco, Dpto de Física Aplicada and Dpto. de Química C-IX, Univ. Autónoma de Madrid, 28049 Madrid, Spain
- B-II/P31 INTEGRATION OF A POROUS SILICON LIGHT EMITTING DIODE AND A WAVEGUIDE BASED ON A MULTILAYER ALUMINA STRUCTURE**, S. Lazareuk, P. Jaguiro, Belarusian State University Informatics and Radioelectronics, P.Brovki 6, 220027, Minsk, Belarus
- B-II/P32 AVALANCHE LED ON MONOCRYSTAL AND POROUS SILICON**, P. Jaguiro, JV'Belaya Vezha', Chorny Str. 9A, 220012 Minsk, Belarus and S. Lazareuk, BSUIR, Brovki Str. 6, 220600 Minsk, Belarus
- B-II/P33 NEW PEAKS IN INFRARED ELECTROLUMINESCENCE OF REVERSE BIASED POROUS SILICON LIGHT EMITTING DIODES**, S. Lazareuk, P. Jaguiro, V. Borisenko, Belarusian State University Informatics and Radioelectronics, P.Brovki 6, 220027 Minsk, Belarus
- B-II/P34 DETERMINATION OF LOCALIZED STATES IN POROUS SILICON**, T. Matsumoto, J. Qi, Y. Masumoto, Single Quantum Dot Project, ERATO, JST 5-9-9 Tokodai, Tsukuba 300.26, Japan and N. Koshida, Tokyo University of Agriculture and Technology, Tokyo 184, Japan
- B-II/P35 POROUS SILICON: PREPARATION AND CHARACTERIZATION FOR ELECTROLUMINESCENT APPLICATIONS**, L. Kleps, A. Angelescu, IMT, PO Box 38-160, 72996 Bucharest, Romania
- B-II/P36 POROUS SILICON LAYERS APPLIED TO SILICON SOLAR CELLS AND LIGHT EMITTING DIODES**, D. Dimova-Malinovska, Central Laboratory for Solar Energy and New Energy Sources, Bulg. Acad. Sci., Tzarigradsko chaussée 72, 1784 Sofia, Bulgaria
- B-II/P37 THE DECAY KINETICS OF POR-Si ELECTROLUMINESCENCE AND RELAXATION PROCESSES AT POR-Si/Si HETEROSTRUCTURES**, P.V. Galiy, T.I. Lesiv, L.S. Monastyrskii, T.M. Nenchuk, I.B. Olenych, O.Ye. FFunt, Physical Department, Lviv State University, 50 Dragomanov str., 290005 Lviv, Ukraine
- B-II/P38 ELECTROLUMINESCENT p-n STRUCTURES WITH POROUS SILICON**, T. Gorbach, S. Svechnikov, P. Smertenko, D. Voronkov, ISP NASU, Nauki avenue 45, 252028 Kyiv, Ukraine; N. Vorozov, L. Dolgyi, N. Kazuchiits, BSUIR, P.Brovki Street 6, 220027 Minsk, Belarus and R. Ciach, J. Morgel, IMMS PAS, Reymonta Street 25, 30059 Krakow, Poland
- B-II/P39 PECULIARITIES OF CHARGE INJECTION INTO SILICON IN TEMPERATURE RANGE FROM 77 K TO 400 K**, G.O. Sukach, P.Ph. Oleksenko, P.S. Smertenko, M. Evstigneev, A.B. Bogoslovskaya, V. Yu. Goroneskul, ISP NASU, prospekt Nauki 45, 252028 Kyiv, Ukraine
- B-II/P40 EFFECT OF FREQUENCY AND MAGNETIC FIELD ON CAPACITANCE OF STRUCTURES BASED ON POROUS SILICON**, N.S. Averkiev, A.A. Lebedev, A.D. Remenyuk, N.N. Smirnova, Power Devices Laboratory, Ioffe Physical-Technical Institute, 26 Polytekhnicheskaya, 194021 St. Petersburg, Russia
- B-II/P41 ELECTRON TRANSPORT IN POROUS AMORPHOUS SILICON**, A.I. Yakimov, N.P. Stepina, A.V. Dvurechenskiy, Institute of Semiconductor Physics, Novosibirsk, Russia
- B-II/P42 ABSENCE OF CARRIER HOPPING IN POROUS SILICON**, I. Mihalcescu, J.-C. Vial and R. Romestain, Laboratoire de Spectrométrie Physique, Université Joseph-Fourier Grenoble, BP 87, 38402 St Martin d'Hères Cedex, France
- Nanocrystals**
- B-II/P43 THE ORIGIN OF PHOTOLUMINESCENCE IN Ge-IMPLANTED SiO₂ LAYERS**, H.B. Kim, K.H. Chae, and C.N. Whang, Department of Physics & Atomic-scale Surface Science Research Center, Yonsei University, Seoul 120-749, Korea; J.Y. Jeong, M.S. Oh, and S. Im, Department of Metallurgical Engineering, Yonsei University, Seoul 120-749, Korea; J.H. Song, Advanced Analysis Center, Korea Institute of Science and Technology, Seoul 130-650, Korea
- B-II/P44 DEFECT VS. NANOCRYSTAL LUMINESCENCE EMITTED IN RT AND HOT-IMPLANTED SiO₂ LAYERS**, J.Y. Jeong, S. Im, M.S. Oh, Department of Metallurgical Engineering, Yonsei University, Seoul, Korea; H.B. Kim, K.H. Chae, and C.N. Whang, Department of Physics & Atomic-scale Surface Science Research Center, Yonsei University, Seoul, Korea; J.H. Song, Advanced Analysis Center, Korea Institute of Science and Technology, Seoul, Korea

E-MRS'98 SPRING MEETING



SYMPOSIUM C

Growth, Characterisation and Applications of Bulk II-VIs

Symposium Organizers

R. TRIBOULET	CNRS/LPSB, Meudon, France
P. CAPPER	GEC-Marconi Infrared Ltd, Southampton, UK
G. MÜLLER-VOGT	University of Karlsruhe, Karlsruhe, Germany

SYMPOSIUM C

Tuesday, June 16, 1998
Mardi 16 juin 1998

Morning
Matin

SESSION I - CdTe and CdZnTe Growth

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|-------|-------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| C-I.1 | 9:00-9:30 | -Invited- | CRYSTAL GROWTH CONTROL OF CdZnTe BY IN-SITU EDDY CURRENT MONITORING, R. Singer, Institute for Defense Analyses, Alexandria, VA 22311-1772, USA |
| C-I.2 | 9:30-10:00 | -Invited- | PRE-TRANSITION PHENOMENA IN CdTe NEAR THE MELTING POINT, L. Shcherbak, Institute of Inorganic Chemistry, Chernivtsi University, 2 vul. Kotsiubinskoho, 274012 Chernivtsi, Ukraine |
| C-I.3 | 10:00-10:20 | | VAPOR PRESSURE SCANNING IMPLICATIONS OF CdTe CRYSTAL GROWTH, J.H. Greenberg, Dept of Inorganic and Analytical Chemistry, Hebrew University, 91904 Jerusalem, Israel |
| | 10:20-10:50 | | BREAK |
| C-I.4 | 10:50-11:20 | -Invited- | RECENT DEVELOPMENTS IN II-VI SUBSTRATES, K. Sato and O. Oda, Materials and Components Laboratory, Japan Energy Corporation, 3-17- 35 Niizo-Minami, Toda, Saitama 340, Japan |
| C-I.5 | 11:20-11:40 | | CdTe AND CdZnTe SINGLE CRYSTAL GROWTH WITH PREDICTABLE AND REPRODUCIBLE MACRO- AND MICROSTRUCTURE, Y.M. Ivanov, Institute of Crystallography of Russian Academy of Sciences, Leninski pr., 117333 Moscow, Russia |
| C-I.6 | 11:40-12:00 | | PARAMETERS OF SUBSTRATES-SINGLE CRYSTALS OF ZnTe AND Cd _{1-x} Zn _x Te (x < 0.20), OBTAINED BY PHYSICAL VAPOUR TRANSPORT TECHNIQUE (PVT), A. Mycielski, A. Szadkowski, E. Lusakowska, L. Kowalczyk, J. Bak-Misiuk, J. Domagala and Z. Wilamowski, Inst. of Physics, Polish Academy of Sciences, Al. Lotnikow 32 /46, 02-668 Warszawa, Poland |
| C-I.7 | 12:00-12:20 | | Zn CONCENTRATION DETERMINATION IN CdZnTe BY NIR SPECTROSCOPY, C.D. Maxey, J.E. Gower, P. Capper, T. Skauli*, GEC-Marconi Infra-Red Ltd, PO Box 217, Milbrook Industrial Estate, Southampton, SO15 0EG, UK.; *Forsvarets Forskiningsinstitutt, PO Box 25, 2007 Fjeller, Norway |
| | 12:20-14:00 | | LUNCH |

SYMPOSIUM C

Tuesday, June 16, 1998
Mardi 16 juin 1998

Afternoon
Après-midi

SESSION II - Wide Gaps Growth

- C-II.1 14:00-14:20 VAPOUR GROWTH AND DOPING OF ZnSe SINGLE CRYSTALS, Yu.V. Korostelin, V.I. Kozlovsky, A.S. Nasibov, P.V. Shapkin, P.N. Lebedev Physical Institute of RAS, 53 Leninsky pr., 117924 Moscow, Russia
- C-II.2 14:20-14:40 IN SITU OBSERVATION OF TWIN FORMATION DURING THE GROWTH OF ZnSe SINGLE CRYSTALS FROM THE VAPOR PHASE, E. Schüherr and M. Freiberg, Max-Planck-Institut für Festkörperforschung, Heisenbergstr. 1, 70569 Stuttgart, Germany
- C-II.3 14:40-15:00 Al-DOPED ZnSe ORIENTED SUBSTRATES, P. Lemasson, A. Rivière, G. Didier, A. Tromson-Carli and R. Triboulet, CNRS/LPSB, 1 Place A. Briand, 92195 Meudon Cedex, France
- C-II.4 15:00-15:20 DEPENDENCE OF LATTICE PARAMETER OF MELT-GROWN ZnSe ON Zn PARTIAL PRESSURE DURING IN-SITU ANNEALING, H. Uchino, I. Kikuma and Y. Okada*, Faculty of Engineering, Ibaraki University, 4-12-1 Nakanarusawa-cho, Hitachi-shi, Ibaraki 316, Japan; *Electrotechnical Laboratory, 1-1-4 Umezono, Tsukuba-shi, Ibaraki 305, Japan
- 15:20-15:50 BREAK

SESSION III - Narrow Gaps

- C-III.1 15:50-16:20 -Invited- LASER EMISSION IN CdHgTe IN THE 2-3.5 μ m RANGE, J. Bleuse, J. Bonnet-Gamard, G. Mula, N. Magnea and J.-L. Pautrat, CEA-Grenoble, Département de Recherche Fondamentale sur la Matière Condensée/SP2M/PSC, 17 rue des Martyrs, 38054 Grenoble Cedex 9, France
- C-III.2 16:20-16:40 CAN PERCOLATION CONTROL DOPING, DIFFUSION AND PHASE SEGREGATION IN (Hg,Cd)Te?, D. Cahen, O. Melamed, I. Riess and I. Lyubomirski*, Weizmann Inst. of Science, Rehovot Israel, Physics, Technion, Haifa, Israel, *EE Dept., UCLA, Los Angeles, CA, USA
- C-III.3 16:40-17:00 PARAMETER AND COMPOSITION OF Hg_{1-x}Cd_xTe EPILAYERS, N. Mainzer, A. Berner, E. Lyakin, E. Zolotoyabko, G. Bahir and A. Sher*, Technion, Israel Institute of Technology, Haifa 32000, Israel, *Soreq NRC, Yavne 81800, Israel
- C-III.4 17:00-17:20 GENERATION-RECOMBINATION NOISE AND PHOTO-INDUCED TRANSIENT CONDUCTIVITY IN EPITAXIAL CdHgTe LONG-WAVELENGTH INFRARED DETECTORS, N. Paul, C.M. Van Vliet and S. Mergui, Center for Engineering and Applied Sciences, Florida International University, Miami, FL 33174, USA
- C-III.5 17:20-17:40 ELASTIC PROPERTIES AND THE DEFECTS HETEROSTRUCTURES OF Cd_{1-x}Hg_xTe/CdTe, L.V. Kurilo, I.O. Rudyj, O.I. Vlasenco, State University "Lviv Politechnic", Bandera Str. 12, 290646 Lviv, Ukraine
- C-III.6 17:40-18:00 LATEST ACHIEVEMENTS IN THE GROWTH OF LARGE-SIZE Hg_{1-x}Cd_xTe SINGLE CRYSTALS WITH HOMOGENEOUS PROPERTIES, V.M. Lakeenkov, V.B. Ufimtsev and N.I. Shmatov, State Institute for Rare Metals, 109017 Moscow, Russia
- C-III.7 18:00-18:20 SEEDLESS THM GROWTH OF Hg_{1-x}Cd_xTe (x ~ 0.2) SINGLE CRYSTALS WITHIN ROTATING MAGNETIC FIELD, A.S. Senchenkov, A.S. Tomson* and V.V. Krupukhin*, KBOM/Splav Technical Center, Berezhkovskaya nab.22, 121059 Moscow, Russia *»Orion» State Scientific Center, Plekhanov str.2, 111123 Moscow, Russia

SYMPOSIUM C

Wednesday, June 17, 1998 Afternoon

Mercredi 17 juin 1998

Après-midi

SESSION IV - Doping, Defects, Diffusion

- C-IV.1 14:00-14:30 *-Invited-* DOPING AND CONTACTING OF WIDE GAP II-VI COMPOUNDS, W. Faschinger, Physikalisches Institut der Universität Würzburg, Germany
- C-IV.2 14:30-14:50 ELECTRON-IRRADIATION ENHANCED DISLOCATION GLIDE IN II-VI SEMICONDUCTORS, C. Levade and G. Vanderschueren, CEMES-CNRS, BP 4347, 31055 Toulouse Cedex, France
- C-IV.3 14:50-15:10 STUDIES ON THE DIFFUSION OF Zn AND In INTO ZnSe, R. Hanas, E.D. Jones, P. Lemasson* and R. Triboulet* Coventry University, Priory Street, Coventry CV1 5FB, UK, *LPSB, CNRS, Meudon, France
- C-IV.4 15:10-15:30 STOICHIOMETRY AND IMPURITY CONCENTRATIONS IN II-VI COMPOUNDS MEASURED BY ELASTIC RECOIL DETECTION ANALYSIS (ERDA), M. Birkholz, W. Bohne, J. Röhrich, A. Jäger-Waldau, M. Lux-Steiner, Hahn-Meitner-Institut, Festkörperphysik, Glienicke Str. 100, 14109 Berlin, Germany
- 15:30-16:00 BREAK
- C-IV.5 16:00-16:20 INVESTIGATION OF INDIUM-DEFECT PAIRS IN CdTe BY PAC SPECTROSCOPY, U. Reislohner, N. Achtziger and W. Witthuhn, Institut für Festkörperphysik, Universität Jena, Max-Wien-Platz 1, 07743 Jena, Germany
- C-IV.6 16:20-16:40 POINT DEFECT CHARACTERIZATION OF Zn- AND Cd-BASED II-VI SEMICONDUCTORS USING POSITRON ANNIHILATION TECHNIQUES, G. Tessaro and P. Mascher, Centre for Electrophotonic Materials and Devices, Department of Engineering Physics, McMaster University, Hamilton, Ontario, Canada

SESSION V - Substrate/Layer Relationship

- C-V.1 16:40-17:10 *-Invited-* SUBSTRATE /LAYER RELATIONSHIPS IN II-VIs, S.J.C. Irvine, A. Stafford and M. Ahmed, North East Wales Institute, Plas Coch, Mold Rd, Wrexham LL11 2AW, UK
- C-V.2 17:10-17:30 CHARACTERIZATION OF CdTe SUBSTRATES AND Cd_{1-x}Zn_xTe EPILAYERS, M. Levy, N. Amir, E. Khanin, A. Muranevich, Y. Nemirovsky and R. Beserman, Physics Department and Dept. of Electrical Engineering, Technion City, 32000 Haifa, Israel

POSTER SESSION

- 17:30-19:30 See programme of this session p. C-7 to C-10.

SYMPOSIUM C

Thursday, June 18, 1998
 Jeudi 18 juin 1998

Morning
 Matin

SESSION VI - Nuclear Detection

- C-VI.1 9:00-9:30 -Invited- STATE OF THE ART OF CdZnTe AS GAMMA DETECTOR, K.W. Benz, Kristallographisches Institut, Hebelstrasse 25, Albert-Ludwigs-Universität Freiburg, 79104 Freiburg, Germany
- C-VI.2 9:30-9:50 ZINC SEGREGATION IN HPB GROWN $Cd_{1-x}Zn_xTe$, P. Fougères, L. Chibani*, M. Hage-Ali*, J.M. Koebel*, G. Hennard, A. Zumbiehl*, P. Siffert*, EURORAD II-VI s.a., BP 20, 67037 Strasbourg Cedex 2, France ; *CNRS / PHASE, BP 20, 67037 Strasbourg Cedex 2, France
- C-VI.3 9:50-10:10 INFLUENCE OF DEEP LEVELS IN CdZnTe NUCLEAR DETECTORS, A. Zerrai, K. Cherkaoui, G. Brémond, G. Marrakchi, P. Fougères*, M. Hage-Ali*, J.M. Koebel*, P. Siffert*, Laboratoire de Physique de la Matière (UMR CNRS 5511), INSA, 20 Av. A. Einstein, 69621 Villeurbanne Cedex, France; *CNRS / PHASE, BP 20, 67037 Strasbourg Cedex 2, France
- 10:20-11:00 BREAK
- C-VI.4 11:00-11:20 INVESTIGATIONS OF DETECTOR GRADE OF CdTe BY SPACE CHARGE LIMITED CURRENT (SCLC), M. Fiederle, T. Felgen, K.W. Benz, Kristallographisches Institut, Hebelstrasse 25, Albert-Ludwigs-Universität Freiburg, 79104 Freiburg, Germany
- C-VI.5 11:20-11:40 ELECTRIC FIELD DISTRIBUTION IN CdTe AND $Cd_{1-x}Zn_xTe$ NUCLEAR DETECTORS, A. Zumbiehl, M. Hage-Ali, P. Fougères*, J.M. Koebel, P. Siffert, CNRS / PHASE, BP 20, 67037 Strasbourg Cedex 2, France, *EURORAD II-VI s.a., BP 20, 67037 Strasbourg Cedex 2, France

SESSION VII

- C-VII.1 11:40-12:00 INVESTIGATIONS ON THE EFFECT OF CONTACTS ON P-TYPE CdTe DLTS MEASUREMENTS, K. Scholz, H. Stiens and G. Müller-Vogt, Kristall und Materiallabor der Fakultät für Physik, Universität Karlsruhe, Engesserstr. 7, 76128 Karlsruhe, Germany
- C-VII.2 12:00-12:20 NEGATIVELY CHARGED EXCITON FORMATION IN AN ASYMMETRIC DOUBLE CdTe/(Cd,Mn)Te QUANTUM WELLS, J. Siviniant, N. Paganotto, A. Kavokin, D. Coquillat, D. Scalbert, J.P. Lascaray, J. Cibert*, GES, UMR 5650 CNRS - Univ. Montpellier 2, Place Eugène Bataillon, 34095 Montpellier cedex 05, France; *Equipe CEA/CNRS Microstructures à Semiconducteurs II-VI, CENG 85X, 38041 Grenoble, France
- 12:20-14:00 LUNCH

SYMPOSIUM C

Thursday, June 18, 1998
Jeudi 18 Juin 1998

Afternoon
Après-midi

SESSION VIII - Solar cells ; Photorefractivity

- C-VIII.1 14:00-14:30 -Invited- STATE OF THE ART AND PROSPECTS OF PHOTOREFRACTIVE CdTe, Y. Marfaing, LPSB, CNRS, 92195 Meudon Cedex, France
- C-VIII.2 14:30-14:50 INTRINSIC DEFECTS IN PHOTOREFRACTIVE BULK CdTe AND ZnCdTe, H.J. von Bardeleben, T. Arnoux*, J.C. Launay**, Groupe de Physique des Solides, Universités Paris 6 & 7, UMR 75-88 au CNRS, 2 place Jussieu, 75251 Paris Cedex 05; *3AR/CNRS/Aerospatiale B.P. 11, 33165 St-Médard-en-Jalles Cedex, France; **I.C.M.C.B. Château Brivazac, 33608 Pessac Cedex, France
- C-VIII.3 14:50-15:10 CHARACTERIZATION OF PHOTOREFRACTIVE CdTe:Ge, B. Briat, K. Shcherbin*, F. Ramaz, B. Farid, H.J. von Bardeleben*, Lab Optique, ESPCI, 10 rue Vauquelin, 75231 Paris Cédex 05, France, *Groupe de Physique des Solides, Univ. Paris 6&7, 2 Place Jussieu, 75231 Paris Cedex 05, France
- C-VIII.4 15:10-15:30 INVESTIGATION OF DEEP LEVELS IN VANADIUM DOPED CdTe AND Cd_{1-x}Zn_xTe, A. Zerrai, G. Marrakchi, G. Brémond, R. Triboulet*, Y. Marfaing*, Laboratoire de Physique de la Matière (UMR CNRS 5511), INSA, 20 Av. A. Einstein, 69621 Villeurbanne Cedex, France; *Laboratoire de Physique des Solides de Bellevue, 1 Place A. Briand, 92195 Meudon Cedex, France
- C-VIII.5 15:30-16:00 -Invited- SCIENTIFIC STATUS OF CdTe/CdS SOLAR CELLS, K. Durose, P. Edwards and D. Halliday, Department of Physics, University of Durham, South Road, Durham DH1 3LE, UK

16:00-16:30

CLOSING ADDRESS

END OF SYMPOSIUM C

SYMPOSIUM C

SYMPOSIUM C
POSTER SESSION

Wednesday June 17, 1998
Mercredi 17 juin 1998

Afternoon
Après-midi

Poster Session
17:30-19:30

- C/P1 *A DETECTING SYSTEM FOR DOSE MEASUREMENT OF GAMMA- AND X-RAY RADIATION, V.D. Ryzhikov, V.G. Volkov, A.I. Pantelev, V.V. Chernikov, Scientific and Technological Center for Radiation Instruments of STC «Institute for Single Crystals» of the National Academy of Sciences, 60 Lenin Ave., 310001 Kharkov, Ukraine / THE USE OF SEMICONDUCTOR SCINTILLATION CRYSTALS A II B VI IN RADIATION INSTRUMENTS, V.D. Ryzhikov, L.P. Gal'chinskii, V.G. Volkov, S.N. Galkin, E.A. Danshin, E.K. Lisetskaya, A.D. Opolonin, A.E. Filimonov, V.V. Chernikov, Scientific and Technological Center for Radiation Instruments of STC «Institute for Single Crystals» of the National Academy of Sciences, 60 Lenin Ave., 310001 Kharkov, Ukraine*
- C/P2 *LUMINESCENCE OF ZnSe(Te) CRYSTALS MELT - GROWN FROM THE CHARGE ENRICHED IN SELENIUM, V.D. Ryzhikov, L.P. Gal'chinskii, S.N. Galkin, K.A. Katrunov, E.K. Lisetskaya, Scientific and Technological Center for Radiation Instruments of STC «Institute for Single Crystals» of the National Academy of Sciences, 60 Lenin Ave., 310001 Kharkov, Ukraine / EFFECTS OF DEFECT FORMATION ON THERMAL AND RADIATION STABILITY OF SCINTILLATOR ZnSe(Te), V.D. Ryzhikov, N.G. Starzhinskii, STC for Radiation Instruments, Concern «Institute for Single Crystals», 60 Lenin Ave., Kharkov 310001, Ukraine / COMPETITION OF RADIATIVE RECOMBINATION CHANNELS AND ITS EFFECT ON KINETIC AND COUNTING PROPERTIES OF SCINTILLATOR ZnSe(Te), V.D. Ryzhikov, N.G. Starzhinskii, L.P. Gal'chinskii, S.N. Galkin, E.M. Selegenev, V.I. Silin, STC for Radiation Instruments, Concern «Institute for Single Crystals», 60 Lenin Ave., Kharkov 310001, Ukraine*
- C/P3 *DISTRIBUTION OF TELLURIUM IN MELT-GROWN ZnSe(Te) CRYSTALS, L.V. Atroshchenko, L.P. Gal'chinskii, S.N. Galkin, V.D. Ryzhikov, V.I. Silin, N.I. Shevtsov, STC for Radiation Instruments, Concern «Institute for Single Crystals» 60 Lenin Ave., Kharkov 310001, Ukraine*
- C/P4 *STRUCTURE DEFECTS AND PHASE TRANSITION IN TELLURIUM-DOPED ZnSe CRYSTALS, L.V. Atroshchenko, L.P. Gal'chinskii, S.N. Galkin, V.I. Silin, V.D. Ryzhikov, STC for Radiation Instruments, concern «Institute for Single Crystals» 60 Lenin Ave., Kharkov 310001, Ukraine*
- C/P5 *DIFFUSION LENGTH OF MINORITY CARRIERS IN (CdZn)Te AND (HgCd)Te MEASURED BY EBIC METHOD, J. Franc, E. Belas, P. Höschl, P. Moravec, Institute of Physics, Charles University, Ke Karlovu 5, 121 16, Prague 2, Czech Republic, A.L. Toth, Research Institute for Technical Physics, Hungarian Academy of Sciences, Foti ut 56, 1047 Budapest, Hungary and H. Sitter, Institute for Experimental Physics, Johannes Kepler University, Altenbergerstrasse 69, Linz, Austria*
- C/P6 *DEFECTS STUDIES IN Cd_{0.95}Mn_{0.05}Te:Ga BY DLTS, J. Szatkowski, E. Placzek-Popko, K. Sieranski, Institute of Physics, Wrocław University of Technology, Wybrzeże Wyspiańskiego 27, 50-370 Wrocław, Poland and B. Bieg, Institute of Physics, Maritime Academy, Waly Chrobrego, 70-500 Szczecin, Poland.*
- C/P7 *COMPUTER SIMULATIONS - AN EFFECTIVE TOOL IN CdZnTe AND CdHgTe HIGH-QUALITY SINGLE CRYSTAL PRODUCTION, P. Prikryl, Math. Inst. Acad. Sci., Zitna 25, 115 67 Prague 1, Czech Republic, A. Kalbac, and R. Cerny, Dept. Phys., Fac. Civil Engng., Czech Tech. Univ., Thakurova 7, 166 29 Prague 6, Czech Republic*
- C/P8 *STRUCTURAL MODIFICATIONS INDUCED IN ZnSe BY SOLID PHASE RECRYSTALLIZATION, E. Rzepka, P. Lemasson and R. Triboulet, CNRS/LPSB 1 pl. A. Briand, 92195 Meudon Cedex, France*
- C/P9 *APPLICATION OF CdTe<Cl> CRYSTALS FOR GAMMA-RAY DOSIMETRY, P.M. Tkachuk, V.I. Tkachuk, N.D. Korbutyak, M.D. Raransky, Chernivtsi State University, Kotsjubinski st. 2, 274012 Chernivtsi, Ukraine and D.V. Korbutyak, S.G. Krylyuk, Institute of Semiconductor Physics, NAS of Ukraine, prospect Nauki 45, 252650 Kiev-28, Ukraine*
- C/P10 *GROWTH AND CHARACTERIZATION OF HIGH-RESISTANCE CdTe<Cl>, D.V. Korbutyak, S.G. Krylyuk, Institute of Semiconductor Physics, NAS of Ukraine, prospect Nauki 45, 252650 Kiev-28, Ukraine and N.D. Korbutyak, M.D. Raransky, V.I. Tkachuk, P.M. Tkachuk, Chernivtsi State University, Kotsjubinski st. 2, 274012 Chernivtsi, Ukraine*

SYMPOSIUM C

- C/P11 CONDUCTIVITY CHANGE OF Au/p-CdTe/Au IN DEPENDENCE ON TEMPERATURE GRADIENT, S. Vackova, Department of Physics, Faculty of Mechanical Engineering, Czech Technical University, Technická 4, 166 07 Prague, Czech Republic, K. Zdanský, Institute of RadioEngineering and Electronics AV CR, Prague, K. Vacek, UJEP University, Usti n. Labem, Czech Republic, L. Scherback, P. Feichouk and M. Ilaschouk, Chernivtsy University, Ukraine
- C/P12 POST-GROWTH CONTROL OF CdTe STRUCTURAL PROPERTIES, N.V. Sochinskii, Dept. Fisica Aplicada and ICMUV, Universitat de València, Dr. Moliner 50, 46100 Burjassot, Spain and E. Diéguez, Dept. Fisica de Materiales, Universidad Autonoma, 28049 Madrid, Spain.
- C/P13 HIGH TEMPERATURE CONDUCTIVITY IN THE PHASE TRANSITION REGION, K. Lott and T. Nirk, Tallinn Technical University, Ehitajate tee 5, 0026 Tallinn, Estonia / HIGH TEMPERATURE CONDUCTIVITY IN THE Cu SOLUBILITY LIMIT RANGE IN ZnS:Cu, K. Lott, M. Raukas, Tallinn Technical University, Ehitajate tee 5, 0026 Tallinn, Estonia; A. Vishnjakov, D.I. Mendelev, A. Grebennik, University of Chemical Technology of Russia, Miusskaya sq.9, 125190 Moscow, Russia
- C/P14 A METHOD FOR THE CALCULATION OF DEFECT EQUILIBRIUM, K. Lott and L. Tünn, Tallinn Technical University, Ehitajate tee 5, 0026 Tallinn, Estonia
- C/P15 IMPROVEMENT OF CdTe SUBSTRATES QUALITY BY ACOUSTIC TREATMENT, V.L. Korchnoi, M.I. Lisiansky, R. Weil, A. Berner, Technion-Israel Institute of Technology, 32000 Haifa, Israel
- C/P16 LOW PRESSURE SYNTHESIS AND BRIDGMAN GROWTH OF $Hg_{1-x}Mn_xTe$, C. Reig, N. Sochinskii and V. Munoz, Dept. Fisica Aplicada and ICMUV, Universitat de Valencia, Dr. Moliner 50, 46100 Burjassot, Spain
- C/P17 STUDY OF THE CHEMICALLY ACTIVATED SUBLIMATION OF ZnSe, L. Mora-Sero, V. Munoz, Dept. de Fisica Aplicada, Universitat de València, Edifici d'investigacio, Dr. Moliner 50, 46100 Burjassot, Spain; M. Barbe and R. Triboulet, C.N.R.S., Laboratoire de Physique des Solides de Bellevue, 1 Place Aristide Briand, 92195 Meudon, France
- C/P18 WIDEGAP II-VI SEMICONDUCTORS DOPED WITH Mn AS DETECTORS OF IONISING RADIATION, B. V. Shulgin, E.G. Sitnikov, Ural State Technical University, 620002 Ekaterinburg, Russia and V.I. Sokolov, Institute of Metal Physics UB RAS, 620219 Ekaterinburg, Russia
- C/P19 HIGH TEMPERATURE POINT DEFECT EQUILIBRIUM IN CdTe MODELLING, P. Fochuk, O. Korovyanko, O. Panchuk, Institute of Inorganic Chemistry, Chernivtsi University, 2 vul. Kotsiubinskoho, 274012 Chernivtsi, Ukraine
- C/P20 IV GROUP DOPANT COMPENSATION EFFECT IN CdTe, O. Panchuk, A. Savitskiy, P. Fochuk, Ye. Nykonyuk, O. Parfenyuk, L. Shcherbak, M. Ilashchuk, L. Yatsunyk, P. Feychuk, Institutes of Inorganic Chemistry, Physical Electronics, Chernivtsi University, 2 vul. Kotsiubinskoho, 274012 Chernivtsi, Ukraine
- C/P21 MAGNETOOPTICAL STUDIES OF QUATERNARY DILUTED MAGNETIC SEMICONDUCTORS, L. Bryja, M. Ciorga, J. Misiewicz, Wrocław University of Technology, Institute of Physics, Wyspiarskiego 27, 50-370 Wrocław, Poland; P. Bacia, MIT Cambridge, USA
- C/P22 CdZnTe RADIATION DETECTORS, A.A. Melnikov, A.S. Sigov, K.A. Vorotilov, A. Yu. Manokhine, Moscow State Institute of Radioengineering, Electronics and Automation, Technical University, Moscow, Russia
- C/P23 GROWTH OF CdZnTe MONOCRYSTALS FOR RADIATION DETECTORS, A.A. Melnikov, A.S. Sigov, K.A. Vorotilov, A.A. Davydov, L.I. Topalova and N.V. Zhavoronkov, Moscow State Institute of Radioengineering, Electronics and Automation, Technical University, Moscow, Russia
- C/P24 CRYSTAL GROWTH OF SrS FROM Te SOLUTION AND THEIR OPTICAL PROPERTIES, H. Kagawa, T. Kato and H. Kanie, Science Univ. of Tokyo, 2641 Yamazaki, Noda, Japan
- C/P25 STRUCTURAL PROPERTIES OF MOVPE-GROWN ZnSe STUDIED BY X-RAY DIFFRACTOMETRY, ATOMIC FORCE MICROSCOPY AND ELECTRON MICROSCOPY, Q. Liu, H. Lakner, C. Mendorf, E. Kubatek, Gerhard-Mercator-Universität Duisburg, Werkstoffe der Elektrotechnik, 47048 Duisburg, Germany, W. Taudt, K. Heime, Institut für Halbleitertechnik, RWTH Aachen, 52056 Aachen, Germany, M. Heuken, AIXTRON AG, Kackertstr. 15 - 17, 52072 Aachen, Germany
- C/P26 ENHANCEMENT OF MAGNETOOPTICAL EFFECTS IN ZnHgMnTe SOLID SOLUTIONS, A.I. Savchuk, V.I. Fediv, V.M. Frasunyak, I.D. Stolyarchuk, Dept. of Phys. Electronics, University of Chernivtsi, 274012 Chernivtsi, Ukraine and P.I. Nikitin, General Physics Institute, 117942 Moscow, Russia
- C/P27 ISOTOPICALLY PURE ZnSe CRYSTALS FROM THE VAPOR, R. Lauck and E. Schönherr, Max-Planck-Institut für Festkörperforschung, Heisenbergstr. 1, 70569 Stuttgart, Germany
- C/P28 PREPARATION OF (001) ZnSe SURFACES FOR HOMOEPITAXY, S. Storm, W. Neumann, Humboldt-Universität zu Berlin, Institut für Physik/Kristallografie, Invalidenstrasse 110, 10115 Berlin, Germany

SYMPOSIUM C

- C/P29 **OBSERVATION OF EXCITON LOCALISATION IN SOLID SOLUTIONS ZnCdSe: Ni AND ZnSeS: Ni BY ELECTROABSORPTION**, V.I. Sokolov, Institute of Metal Physics UB RAS, Ekaterinburg 620219, Russia and V.G. Masurenko, P.S. Il'ichev, Ural State Technical University, Ekaterinburg 620002, Russia
- C/P30 **HEAT TRANSFER SIMULATION IN A VERTICAL BRIDGMAN CdTe GROWTH SYSTEM**, C. Martinez-Tomas, V. Munoz, Dept. Fisica Aplicada and ICMUV, Universitat de Valencia, Dr. Moliner 50, 46100 Burjassot, Spain; and R. Triboulet, C.N.R.S., de Bellevue, L.P.S., 1 Place Aristide Briand, 92195 Meudon, France
- C/P31 **FEATURES OF OPTICAL FTIR SPECTRA OF SEMIMAGNETIC $Hg_{1-x}Mn_xTe_{1-y}Se_y$ SINGLE CRYSTALS**, A.I. Belogorokhov, Institute of Rare Metals, Leninsky prosp., 156-517, Moscow 117571, Russia, L.I. Belogorokhova, V.A. Kulbachinskii, P.D. Marjanchuk, I.A. Churilov, Moscow State University, Physics Department, Russia
- C/P32 **INVESTIGATION OF (Cd,Hg)Te DEFECT SUBSTRUCTURE AND CARRIER CONCENTRATION AFTER LASER TREATMENT**, A. Zaginey, B. Kotlyarchuk, Institute of Applied Problems of Mechanics and Mathematics NASU, 3b Naukova str., 290601 L'viv, Ukraine, V. Savitsky, V. Pisarevsky, Institute of Applied Physics LSU, 49 Chuprinky str., 290044 L'viv, Ukraine
- C/P33 **MODIFICATION OF CdTe SUBSTRUCTURE BY LASER IRRADIATION**, A. Zaginey, B. Kotlyarchuk, Institute of Applied Problems of Mechanics and Mathematics NASU, 3b Naukova str., 290601 L'viv, Ukraine, V. Savitsky, V. Pisarevsky, Institute of Applied Physics LSU, 49 Chuprinky str., 290044 L'viv, Ukraine
- C/P34 **INVESTIGATION OF PROCESSES OF GROWTH FROM GASEOUS PHASE THE HgTe-CdTe SOLID SOLUTION**, N.A. Ukrainets, G.A. Ilchuk, B.J. Datsko, V.O. Ukrainets, I.E. Lopatynsky, State University "Lvivska Politehnika", 12 Bandera Street, 290646 Lviv, Ukraine
- C/P35 **DEEP IMPURITY LEVELS AND SHALLOW DEFECTS IN CdFeTe CRYSTALS**, Yu.P. Gnatenko, I.O. Faryna, R.V. Gamernyk, Institute of Physics of NAS of Ukraine, Prospekt Nauky 46, 252650 Kyiv 22, Ukraine
- C/P36 **SCANNING FORCE MICROSCOPY AND ELECTRON STUDIES OF PULSED LASER DEPOSITED ZnO THIN FILMS: APPLICATION TO THE BULK ACOUSTIC WAVES (BAW) DEVICES**, P. Verardi, C. Ghica*, C. Gherasim**, M. Dinescu***, N. Nastase**, C. Fluerau***, CNR-Area Ricerca Tor Vergata, Istituto di Acustica, Roma, Italy; *NIMP, PO Box MG-26, 76 900 Bucharest V, Romania; **National Institute of Microtechnology, Bucharest, Romania; ***IFA, NILPRD, PO Box MG-16, 76 900, Bucharest V, Romania
- C/P37 **CHOOSING BULK II-VI SUBSTRATES FOR SEGREGATION-FREE CMT EPILAYERS**, S.I. Chikichev, Institute of Semiconductor Physics, Russian Academy of Sciences, Siberian Branch, Academician Lavrentiev Avenue 13, 630090 Novosibirsk, Russia, and Department of Semiconductor Physics, Novosibirsk State University, Pirogov Street 2, 630090, Novosibirsk, Russia
- C/P38 **DIRECT EXPERIMENTAL EVIDENCE OF THE SELF-COMPENSATION MECHANISM IN II-VI's**, U. V. Desnica, I. D. Desnica-Frankovic, R. Boskovic Institute, Bijenicka c. 56, Zagreb, Croatia, and R. Magerle and M. Deicher, Fakultät für Physik, Universität Konstanz, 78434 Konstanz, Germany
- C/P39 **RESISTIVITY SIMULATION OF CdTe AND CdZnTe MATERIALS**, A. Zumbiehl, P. Fougères*, M. Hage-Ali, J.M. Koebel, P. Siffert, A. Zerrai**, K. Cherkasov***, G. Marrakchi**, G. Brémond***, CNRS/PHASE, BP 20, 67037 Strasbourg Cedex 2, France, *EURORAD, BP 20, 67037 Strasbourg Cedex 2, France, **L.P.M., INSA Lyon, Bat. 502, 20, av. A. Einstein, 69621 Villeurbanne, France
- C/P40 **NUMERIC SIMULATION OF VERTICAL BRIDGMAN CRYSTALLISATION OF $Cd_{1-x}Zn_xTe$ MELTS**, V.M. Lakeenkoy, V.B. Ufimtsev, N.I. Shmatov and Yu.F. Schelkin, State Institute for Rare Metals, 109017 Moscow, Russia
- C/P41 **FEMTOSECOND DYNAMICS OF SEMICONDUCTOR II-VI MICROCAVITY MODES**, E.A. Vinogradov, A.L. Dobrya-kov, Yu.E. Lozovik, Yu.A. Matveets, V.M. Fardinov, Institute of Spectroscopy, Troitsk, Moscow Region, 142092 Russia, and S.A. Kovalenko, Humboldt - Universität zu Berlin, Germany
- C/P42 **PHOTOPLASTIC EFFECT IN ZnS**, S. Koubaiti*, C. Levade and G. Vanderschaeye CEMES-CNRS, BP 4347, 31055 Toulouse Cedex, France. (*) present address: Université Ibn Tofail, Kenitra, Morocco
- C/P43 **PHOTO- AND X-RAY SENSITIVE HETEROSTRUCTURES BASED ON CADMIUM TELLURIDE**, R. Ciach, M.V. Demych*, P.M. Gorley*, Z. Kuznicki**, V.P. Makhniy*, I.V. Malimon*, Z. Swiatek, Institute for Metallurgy and Materials Science, Polish Academy of Science, 25 Reymonta St., 30-059, Cracow, Poland; *Chernivtsi State University, 2 Kotsyubynsky St., 274012 Chernivtsi, Ukraine; ** CNRS, Laboratoire PHASE (UPR 292), BP 20, 67037 Strasbourg Cedex 2, France
- C/P44 **VOLUMETRIC CHANGES AT THE MELTING POINT AND KINETIC PROPERTIES OF CADMIUM AND MERCURY TELLURIDES MELTS**, V.M. Glazov, L.M. Pavlova, Moscow Institute of Electronic Technology (Technical University), Physico-chemical Department, 103498 Moscow (Zelenograd), Russia
- C/P45 **DIFFUSION IN CdTe AND CdS AND THE PHASE DIAGRAM OF THE CdS-CdTe PSEUDO-BINARY ALLOY**, G.J. Conibeer, D.A. Wood, D.W. Lane, K.D. Rogers, Dept of Materials and Medical Sciences, Cranfield University at Shrivenham, Swindon SN6 8LA, UK; P. Capper, GEC Marconi Infra-Red Ltd, Southampton, SO15 0EG, UK

SYMPOSIUM C

- C/P46 *INFLUENCE OF HIGH TEMPERATURE ANNEALING IN Bi-AND Sb-BASED MELTS AND VAPORS ON THE DEFECT DISTRIBUTION IN ZnS SINGLE CRYSTALS, V. Korotcov, K. Sushkevich, R. Sobolevskaia, L. Bruk, M. Nazarov, P. Ketrush, State University of Moldova, A.Mateevich street 60, MD2009, Chishinau, Moldova*
- C/P47 *USE OF NEAR INFRARED AS A SCREENING TECHNIQUE FOR CdZnTe SUBSTRATES, J. Gower, C. Maxey, P. Capper, E. O'Keefe, L. Bartlett, S. Dean, J. Harris, GEC-Marconi Infra-Red Ltd, PO Box 217, Milbrook Industrial Estate, Southampton, SO15 0EG, UK. T. Skauli, Forsvarets Forskiningsinstitutt, PO Box 25, 2007 Fjeller, Norway*
- C/P48 *[GaAs]_{1-x}[ZnSe]_x RERADIATING LAYERS ON GaAs/Ge SOLAR CELLS, V.A. Krasnov, Inst. of Semicond. Phys., Ukrainian Acad. Sci., Kherson Depart., PO Box 76, 325008 Kherson, Ukraine*
- C/P49 *INVESTIGATION OF THE GRAIN GROWTH IN THE SOLID STATE RECRYSTALLIZATION OF ZnSe, S. Fusil, A. Zozime, A. Rivière and R. Triboulet, Lab. Phys. des Solides de Bellevue, 1 Place A. Briand, 92195 Meudon Cedex, France*
- C/P50 *EFFECT OF DISLOCATIONS ON CRYSTAL STRUCTURE AND CHARGE STATES OF PARAMAGNETIC CENTERS IN ZnS, M.F. Bulanyi, V.A. Kovalenko, S.A. Omelchenko, Diepropetrsk State University, Radiophysical Department, 13, Nauchnaya by Street, Diepropetrovsk, 320625 Ukraine*

E-MRS'98 SPRING MEETING



SYMPOSIUM D

**Thin Films Epitaxial Growth
and Nanostructures**

Symposium Organizers

- E. KASPER** Inst. für Halbleitertechnik, Univ. Stuttgart, Stuttgart, Germany
- K.L. WANG** University of California, Los Angeles, CA, USA
- H. HASEGAWA** Interface Quantum Electronics, Hokkaido Univ., Sapporo, Japan

SYMPOSIUM D

Tuesday, June 16, 1998
Mardi 16 juin 1998

Morning
Matin

SESSION I - Selfassembled Structures

Chairpersons: E. Kasper, *Inst. für Halbleitertechnik, Univ. Stuttgart, Stuttgart, Germany*
H. Hasegawa, *Interface Quantum Electronics, Hokkaido Univ. Sapporo, Japan*

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|-------|-------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| D-I.1 | 9:00-9:40 | - Invited - | STRAIN AND SHAPE OF SELF-ASSEMBLED QUANTUM DOTS STUDIED BY GRAZING INCIDENCE X-RAY TECHNIQUES, I. Kegel, T.H. Metzger, P. Fratzl, A. Lorke and J. Peisl, <i>University Munich, Sektion Physik, Geschwister-Scholl Platz 1, 80539 Munich, Germany</i> |
| D-I.2 | 9:40-10:00 | | SELF-AGGREGATION OF InAs QUANTUM DOTS ON (N11) GaAs SUBSTRATES, S.Sanguinetti, S.C.Fortina, S.Castiglioni, A.Miotto, E.Grilli, M.Guzzi, M.Henini*, A.Polimeni* and L.Eaves*, I.N.F.M. and Dip.to di Scienza dei Materiali dell'universita' degli Studi, 20126 Milano, Italy,*Department of Physics, University of Nottingham, University Park, Nottingham NG7 2RD, UK |
| | 10:00-10:30 | | BREAK |
| D-I.3 | 10:30-10:50 | | STM STUDY OF InAs QUANTUM DOTS BURIED IN GaAs, B. Legrand, B. Grandidier, J.P.Nys, D. Stiévenard, Institut d'Electronique et de Microelectronique du Nord, IEMN, UMR9929, Département ISEN, 41 Bd Vauban, 59046 Lille Cedex, France, J.M. Gérard and V.Thierry-Mieg, Groupement Scientifique CNET-CNRS, 196 av. H.Ravera, 92220 Bagneux, France |
| D-I.4 | 10:50-11:10 | | SELF-ASSEMBLED NANOSTRUCTURES FROM π -CONJUGATED POLYMERS AT SURFACES, P. Samorì and J.P. Rabe, Department of Physics, Humboldt University Berlin, Invalidenstr. 110, 10115 Berlin, Germany; V. Francke and K. Mollen, MPI for Polymer Research, Ackermann 10, 55021 Mainz, Germany |
| D-I.5 | 11:10-11:30 | | SELF ORGANIZED VICINAL SEMICONDUCTORS SURFACES: A TEMPLATE FOR THE GROWTH OF NANOSTRUCTURES, D. Marrou, N. Magnea, CEA Grenoble DRFMC/SP2M, 17 Avenue des Martyrs, 38054 Grenoble Cedex, France |
| D-I.6 | 11:30-11:50 | | SURFACTANT INDUCED GIANT FACETING OF VICINAL Si(001), M. Horn von Hoegen, Institut für Festkörperphysik, Universität Hannover, Appelstr. 2, 30167 Hannover, Germany |
| D-I.7 | 11:50-12:10 | | NANOSCALE SELECTIVE AREA GROWTH OF ZnSe/ZnS DOTS ON (001) GaAs COVERED WITH CARBONACEOUS MASKS PATTERNED BY AFM, A. Avramescu, Akio Ueta, Katsuhiko Uesugi, Ikuro Suemune, Res. Inst. Elect. Sci, Hokkaido University, Sapporo 060, Japan, Hideaki Machida and Norio Shimoyama, Trichemical Laboratory, Uenohara 8154-217, Yamanishi 409-01, Japan |
| | 12:10-14:10 | | LUNCH |

SYMPOSIUM D

Tuesday, June 16, 1998
Mardi 16 juin 1998

Afternoon
Après-midi

SESSION II - Novel Growth Methods

Chairpersons: H. Hasegawa, *Interface Quantum Electronics, Hokkaido Univ. Sapporo, Japan*
K. Eberl, *Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany*

- D-II.1** 14:10-14:30 *FORMATION OF HIGHLY UNIFORM InGaAs RIDGE QUANTUM WIRES BY SELECTIVE MBE GROWTH ON NOVEL InP PATTERNED SUBSTRATES, Hajime Fujikura and Hideki Hasegawa, Research Center for Interface Quantum Electronics and Graduate School of Electronics and Information Engineering, Hokkaido University, Sapporo 060-8628, Japan*
- D-II.2** 14:30-14:50 *RETARDED DIFFUSION OF BORON IN Si DUE TO THE FORMATION OF AN EPI-TAXIAL CoSi₂ LAYER, L. Kappius, H. L. Bay, S. Mantl, Institut für Schicht- und Ionentechnik, Forschungszentrum Jülich, 52425 Jülich, Germany, A. K. Tyagi, U. Breuer, Zentralabteilung für Chemische Analysen, Forschungszentrum Jülich, 52425 Jülich, Germany*
- D-II.3** 14:50-15:10 *SURFACTANT MEDIATED EPITAXY OF Ge ON Si: PROGRESS IN GROWTH AND ELECTRICAL CHARACTERIZATION, M. Kammiller, D. Reinking, K. R. Hofmann, Institut für Halbleitertechnologie, Appelstr. 11, M. Horn von Hoegen, Institut für Festkörperphysik, Appelstr. 2, Universität Hannover, 30167 Hannover, Germany*
- D-II.4** 15:10-15:30 *GROWTH AND OPTICAL PROPERTIES OF DIRECT ENERGY GAP Sn_xGe_{1-x} ALLOYS ON Ge (001) AND Si (001), R. Ragan, G. He, H.A. Abwater, T.J. Watson Laboratory of Applied Physics, California Institute of Technology, Pasadena, CA 91125, USA*
- 15:30-16:00 **BREAK**

SESSION III - Poster Session I - Selfassembly and Strain Adjustment

16:00-18:00 *See programme of this poster session p. D-9 to D-10.*

SYMPOSIUM D

Wednesday, June 17, 1998
 Mercredi 17 juin 1998

Afternoon
 Après-midi

SESSION IV - Electronic Devices

Chairpersons: M. Kelly, *University of Surrey, Guildford, UK*
 K. De Meyer, *IMEC, Leuven, Belgium*

- D-IV.1 14:10-14:50 - Invited - SILICON QUANTUM INTEGRATED CIRCUITS (SiQUIC), D.J. Paul, *Cavendish Laboratory, University of Cambridge, Madingley Road, Cambridge, CB3 0HE, UK*; G. Redmond, B.J. O'Neill and G. Crean, *NMRC, Lee Maltings, Prospect Row, Cork, Ireland*; S. Mantl, *ISI Forschungszentrum Jülich, 52425 Jülich, Germany*; I. Zozoulenko and K.F. Berggren, *University of Linköping, Linköping 58183, Sweden*; J.-L. Lazzari, F. Arnaud d'Avitaya and J. Derrien, *CRMC2-CNRS, Campus de Luminy, 13288 Marseille Cedex 9, France*
- D-IV.2 14:50-15:10 STRUCTURAL, ELECTRICAL AND HP CHARACTERIZATION OF HIGH SPEED GRADING AND STEP BASE Si/SiGe HBT'S, J. Weller, H. Jorke, K. Strohm, J.-F. Luy, H. Kibbel, H.-J. Herzog, *Daimler-Benz Research Center Ulm, Wilhelm-Runge-Str.11, 89081 Ulm, Germany*; R. Sauer, *Universität Ulm, Albert-Einstein-Allee 45, 89081 Ulm, Germany*
- D-IV.3 15:10-15:30 CARRIER MOBILITIES IN MODULATION DOPED $Si_{1-x}Ge_x$ HETEROSTRUCTURES WITH RESPECT TO FET APPLICATIONS, G. Höck, *Dept. of Electron Devices and Circuits, University of Ulm, Albert-Einstein-Allee 45, 89081 Ulm, Germany*; M. Glück, T. Hackbarth, H.-J. Herzog, *Daimler-Benz AG, Wilhelm-Runge-Str. 11, 89081 Ulm, Germany*
- 15:30-16:00 BREAK
- D-IV.4 16:00-16:40 - Invited - ARCHITECTURES BASED ON NANOSTRUCTURES, V. Roychowdhury, *University of California, Los Angeles, USA*
- D-IV.5 16:40-17:00 SIMULATION OF A NON-INVASIVE CHARGE DETECTOR FOR QUANTUM CELLULAR AUTOMATA, M. Macucci, C. Ungarelli, G. Iannaccone, M. Governale, *Dipartimento di Ingegneria dell'Informazione, Università di Pisa, Via Diotisalvi 2, 56126 Pisa, Italy*

SESSION V - Poster Session II - Growth

17:00-18:30 See programme of this poster session p. D-11 to D-13.

SYMPOSIUM D

Thursday, June 18, 1998
Jedi 18 juin 1998

Morning
Matin

SESSION VI - Island and Wire Formation

Chairpersons: **G. Abstreiter, *Walter Schottky Institut, Garching, Germany***
M. Lagally, *University of Wisconsin-Madison, Madison, WI, USA*

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|--------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| D-VI.1 | 9:00-9:20 | NUCLEATION AND GROWTH OF SELF-ASSEMBLED Ge/Si(001) QUANTUM DOTS BY UHV-CVD, <u>V. Le Thanh</u>, P. Boucaud, D. Débarre, C. Ulysse, D. Bouchier, and J.-M. Lourtioz, <i>Institut d'Electronique Fondamentale, Université Paris-Sud, 91405 Orsay, France</i> |
| D-VI.2 | 9:20-9:40 | PHOTOLUMINESCENCE OF Ge DOTS GROWN BY ULTRA - HIGH- VACUUM CHEMICAL VAPOR DEPOSITION ON Si(001), <u>P. Boucaud</u>, V. Le Thanh, D. Débarre, D. Bouchier, J.-M. Lourtioz, <i>IEF, Université Paris XI, 91405 Orsay, France</i> |
| D-VI.3 | 9:40-10:00 | MORPHOLOGY AND PHOTOLUMINESCENCE OF Ge ISLANDS GROWN ON Si (001), <u>M. Goryll</u>, L. Vescan and H. Lüth, <i>Institute of Thin Film and Ion Technology, Research Centre Jülich, 54245 Jülich, Germany</i> |
| | 10:00-10:30 | BREAK |
| D-VI.4 | 10:30-10:50 | C-INDUCED Ge DOTS: A VERSATILE TOOL TO FABRICATE ULTRA-SMALL Ge NANOSTRUCTURES, <u>O.G. Schmidt</u>, S. Schieker, K. Eberl, <i>Max-Planck-Institut für Festkörperforschung, Heisenbergstrasse 1, 70569 Stuttgart, Germany</i> and O. Kienzle, F. Ernst, <i>Max-Planck-Institut für Metallforschung, Seestrasse 92, 70174 Stuttgart, Germany</i> |
| D-VI.5 | 10:50-11:10 | LATERAL ORDERING OF SELF-ASSEMBLED Ge ISLANDS, <u>Jian-hong Zhu</u>, K. Brunner, G. Abstreiter, <i>Walter Schottky Institut, Technische Universität München, Am Coulombwall, 85748 Garching, Germany</i> |
| D-VI.6 | 11:10-11:30 | SELF ORGANISATION OF Ge DOTS ONTO Si SUBSTRATES : INFLUENCE OF THE MISORIENTATION, <u>M. Abdellah</u>, I. Berbezier, <i>CRMC2 – CNRS Campus de Luminy, Case 913, 13288 Marseille France</i>, P. Dawson, <i>UMIST, PO Box 88, Manchester M60 1QD, UK</i>, M. Serpentine, G. Brémond, <i>Laboratoire de Physique de la Matière (UMR CNRS 5511), INSA, 20 Av. A. Einstein, 69621 Villeurbanne Cedex, France</i>, B. Joyce, <i>IRC, Imperial College of Science, Technology and Medicine, The Blackett Laboratory, Prince Consort Road, London SW7 2BZ, UK</i> |
| D-VI.7 | 11:30-11:50 | PERFECT BISMUTH LINES IN SILICON EPILAYER, <u>K. Miki</u>, K. Sakamoto, <i>Electrotechnical Laboratory, Tsukuba 305-8568, Japan</i>; D.R. Bowler, J.H.G. Owen, G.A.D. Briggs, <i>Materials Dept., Oxford University, Parks Road, Oxford OX1 3PH, UK</i> |
| | 11:50-14:10 | LUNCH |

SYMPOSIUM D

Thursday, June 18, 1998
Jeudi 18 Juin 1998

Afternoon
Après-midi

SESSION VII - Analysis and Modelling of Nanostructures

Chairpersons: J. Derrien, *CRMC2-CNRS, Marseille, France*
K. Eberl, *Max-Planck-Institut für Festkörpersphysik, Stuttgart, Germany*

- D-VII.1 14:10-14:50 - Invited - *IN-SITU LEEM OBSERVATION OF ISLAND GROWTH*, P. Sutter, *University of Wisconsin-Madison, WI 53706, USA*
- D-VII.2 14:50-15:10 *X-RAY DIFFRACTION ANALYSIS OF STRAIN RELAXATION IN FREE STANDING AND BURIED LATERALLY PATTERNED SQW STRUCTURE*, N. Darowski, U. Pietsch, *Department of Physics, University of Potsdam, Germany*, S. Kycia, Q. Shen *CHES, Cornell University, Ithaca N.Y., USA*
- D-VII.3 15:10-15:30 *STUDY OF DEFECTS FORMATION IN GaSb/(001)GaAs ISLANDS BY MONTE CARLO SIMULATION*, J. Dalla Torre^{*,**}, M. Djafari Rouhani^{*,**}, R. Malek^{*}, **Laboratoire d'Analyse et d'Architecture des Systèmes, 7, Av. du Colonel Roche, 31077 Toulouse Cedex, France, **Laboratoire de Physique des Solides, Université Paul Sabatier, 31062 Toulouse Cedex, France*
- 15:30-16:00 BREAK
- D-VII.4 16:00-16:20 *MODELLING OF INITIAL STAGE OF SILICON EPITAXY ON POROUS SILICON (111) SURFACE*, L.N. Aleksandrov, P.L. Novikov, A.V. Dvurechenskii, V.A. Zinoyev, *Institute of Semiconductor Physics, Academy of Science, 630090 Novosibirsk, Russia*
- D-VII.5 16:20-16:40 *EARLY STAGES OF GROWTH AND NANOSTRUCTURE OF Pb(Zr,Ti)O₃ THIN FILMS OBSERVED BY ATOMIC FORCE MICROSCOPY*, F. Craciun, P. Verardi, M. Dinescu^{*}, F. Dinelli^{**}, O. Kolosov^{**}, *CNR Istituto di Acustica, Area di Ricerca Roma-Tor Vergata, Rome, Italy, *Institute of Atomic Physics, Bucharest, Romania, **Department of Materials, University of Oxford, UK*
- D-VII.6 16:40-17:00 *DYNAMIC PROPERTIES OF TRIONS AND EXCITONS IN MODULATION-DOPED CdTe/CdZnMgTe QUANTUM WELLS*, D. Brinkmann, J. Kudrna, E. Vanagas, P. Gilliot, and R. Lévy, *Institut de Physique et Chimie des Matériaux de Strasbourg, Groupe d'Optique Non Linéaire et d'Optoélectronique, UMR 46 CNRS-ULP-ECPM, 23, rue du Loess, B.P. 20 CR, 67037 Strasbourg Cedex, France*, A. Arnoult, J. Cibert, and S. Tatarenko, *Laboratoire de Spectrométrie Physique, Université Joseph Fourier I - CNRS (UMR 55 88), B.P. 87, 38402 Saint Martin d'Hères Cedex, France*
- D-VII.7 17:00-17:20 *DETERMINATION OF THE CRYSTALLOGRAPHIC ORIENTATION IN PbTiO₃ EPITAXIAL FILMS USING OPTICAL SECOND HARMONIC GENERATION*, E.D. Mishina, N.E. Sherstyuk, E.Ph. Pevtsov, A.S. Sigov, and O.A. Aktsipetrov, *Moscow Institute of Radioengineering, Electronics and Automation, Moscow 117454, Russia*, A.M. Grishin, *Royal Institute of Technology, Stockholm, Sweden*
- D-VII.8 17:20-17:40 *SPECTROSCOPIC STUDY OF NANOCRYSTALLINE TiO₂ THIN FILMS GROWN BY ATOMIC LAYER DEPOSITION*, A. Suisalu, J. Aarik^{*}, H. Mändar^{*}, I. Sildos, *Institute of Physics, University of Tartu, Riia 142, 2400 Tartu, Estonia, *Institute of Material Science, University of Tartu, Täh 4, 2400 Tartu, Estonia*

SYMPOSIUM D

Friday, June 19, 1998
Vendredi 19 Juin 1998

Morning
Matin

SESSION VIII - Vertical MOS Transistor

Chairpersons: M. Van Rossum, *IMEC, Leuven, Belgium*
K.L. Wang, *University of California, Los Angeles, CA, USA*

- D-VIII.1 9:00-9:40 - Invited -** *THE VERTICAL HETEROJUNCTION MOSFET, K. De Meyer*, M. Caymax, N. Collaert, R. Loo, P. Verheyen, IMEC, Kapeldreef 75, 3001 Leuven, Belgium, *also KU Leuven, ESAT-INSYS, Kard. Mercierlaan 94, 3001 Leuven, Belgium*
- D-VIII.2 9:40-10:00** *SELECTIVELY GROWN VERTICAL Si MOS TRANSISTOR WITH REDUCED OVERLAP CAPACITANCES, D. Klaes, J. Moers, A. Tonnesmann, S. Wickenhauser, L. Vescan, M. Marso, M. Grimm and H. Luth, Institut für Schicht- und Ionentechnik, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany*
- 10:00-10:30** **BREAK**
- D-VIII.3 10:30-10:50** *INFLUENCE OF DOPING PROFILES ON THE ELECTRICAL CHARACTERISTICS OF VERTICAL SUB-100nm-TRANSISTORS, F. Kaesen, K.G. Anil, C. Fink, W. Hansch, I. Eisele, Universität der Bundeswehr München, 85577 Neubiberg, Germany*
- D-VIII.4 10:50-11:10** *COMPARISON OF LATERAL AND VERTICAL Si-AND SiGe-MOSFETS WITH ULTRA SHORT CHANNELS, D. Behammer, M. Zeuner, G. Höck, T. Hachbarth, J. Hertzog, M. Schäfer*, Daimler-Benz Research Center Ulm, PO Box 2360, 89013 Ulm, Germany ; *CADwalk, Stegäckerstr. 7, 89604 Allmendingen, Germany*
- D-VIII.5 11:10-11:30** *NEW VIRTUAL SUBSTRATE CONCEPT FOR VERTICAL MOS TRANSISTORS, E. Kasper, K. Lyutovich, M. Bauer and M. Oehme, University of Stuttgart, Institut für Halbleitertechnik, Pfaffenwaldfing 47, 70569 Stuttgart, Germany*
- D-VIII.6 11:30-11:50** *OPTICAL AND ELECTRICAL CHARACTERIZATION OF Si/Ge LAYERS FOR VERTICAL SUB-100 nm MOS TRANSISTORS, X. Zhang and P. Unelind, Department of Solid State Physics, Box 118, 22100 Lund, Sweden and J. Olajos, Physics Department, S. Qaboos University, PO Box 36, Al-Khoud 123, Oman*
- 12:10-14:10** **LUNCH**

SYMPOSIUM D

Friday, June 19, 1998
Vendredi 19 Juin 1998

Afternoon
Après-midi

SESSION IX - Poster Session III: Analysis

14:10 - 15:30 See programme of this poster session p. D-14 to D-15.

END OF SYMPOSIUM D

SYMPOSIUM D

SYMPOSIUM D
POSTER SESSIONS

Tuesday June 16, 1998
Mardi 16 juin 1998

Afternoon
Après-midi

SESSION III - Poster Session I: Selfassembly and Strain Adjustment
16:00 - 18:00

- D-III/P1 *GROWTH OF Ge ON H-TERMINATED Si (111) SURFACE, Kunihiro Ishii, Hideki Kuriyama, Satoru Matumoto, Dept. of Elec. Eng., Keio Univ., Hiyoshi, Yokohama 223, Japan*
- D-III/P2 *TEM STUDY OF THE FORMATION OF InAs SELF-ASSEMBLED QUANTUM DOTS IN GaAs, E. Müller*, E. Ribeiro**, T. Heinzel**, K. Ensslin***, G. Medeiros-Ribeiro, and P.M. Petroff; Materials Department, University of California, Santa Barbara, 93106 California, USA; *Labor für Mikro- und Nanostrukturen, Paul-Scherer Institut, 5232 Villigen, Switzerland; **Laboratorium für Festkörperphysik, ETH-Zürich, 8093 Zürich, Switzerland;*
- D-III/P3 *RELATION OF INITIAL THIN FILM FORMATION TO DEFECTS INDUCED BY LOW ENERGY IONS, H.-A. Durand, K. Sekine, K. Etoh, K. Ito, I. Kataoka, Japan Aviation Electronics Industry Ltd, Central Research Laboratory, Musashino 3-1-1, Akishima-shi, Tokyo 196-8555, Japan*
- D-III/P4 *ROLE OF HYDROGEN DURING Si CAPPING OF STRAINED Ge OR Si_{1-x}Ge_x HUT CLUSTERS, D.Dentel, J.L.Bischoff and L.Kubler, LPSE, Université de Haute Alsace, 68093 Mulhouse, France*
- D-III/P5 *CLUSTER-SIZE DISTRIBUTION OF SiGe ALLOYS GROWN BY MBE, N. Pinto, R. Murri, INFN Dipartimento di Matematica e Fisica, Università di Camerino, Via Madonna delle Carceri, 62032 Camerino, Italy; R. Rinaldi, INFN Dipartimento di Scienze dei Materiali, Università di Lecce, Via Arnesano, 73100 Lecce, Italy*
- D-III/P6 *STRUCTURE AND DYNAMICAL PROPERTIES OF Ge NANO-CRYSTALS EMBEDDED IN SiO₂ FILMS, A.G.Rolo, M.J.M. Gomes, Departamento de Fisica, Universidade do Minho, Largo do Pago, 4709 Braga Codex, Portugal, O. Conde, Departamento de Fisica, Universidade de Lisboa, Campo Grande, 1700 Lisboa, Portugal and M.I. Vasilevskiy, Institute for Physics of Microstructures, RAS, 603000 Nizhni Novgorod, Russia*
- D-III/P7 *GROWTH OF III-V SEMICONDUCTOR LAYERS ON Si PATTERNED SUBSTRATES, T.Ya. Gorbach, R.Yu. Holiney, L.A. Matveeva, P.S. Smertenko, S.V. Svechnikov, E.F. Venger, ISP NASU, prospekt Nauki, 45, 252028 Kyiv, Ukraine, R. Chiah, M. Faryna, IMMS PAS, 25 Reymonta ul., 30059 Krakow, Poland*
- D-III/P8 *THE INFLUENCE OF CARBON ON THE SURFACE MORPHOLOGY OF Si(100) AND ON SUBSEQUENT Ge ISLAND FORMATION, R. Butz and H. Lüth, Institute of Thin Film and Ion Technology (ISI), Research Centre Jülich, 52425 Jülich, Germany*
- D-III/P9 *MECHANISMS OF ELASTIC ENERGY MINIMIZATION DURING Si CAPPING OF STRAINED Ge OR Si_{1-x}Ge_x HUT ISLANDS: TEM AND RHEED STUDIES, D. Dentel, J.L. Bischoff, L. Kubler, LPSE, Université de Haute Alsace, 68093 Mulhouse Cedex, France and C. Ghica, C. Uhlaq-Bouillet, J. Werckmann, IPCMS, 23, rue du Loess, 67037 Strasbourg, France*
- D-III/P10 *PHOTOLUMINESCENCE STUDY OF InAs/GaAs SELF-ORGANISED QUANTUM DOTS GROWN BY MBE, M. Hjiri, F. Hassen, H. Maurel and R. Murray*, Laboratoire de Physique des Semiconducteurs, Département de Physique, Faculté des Sciences de Monastir, 5000 Monastir, Tunisia; *IRC, Semiconductor Materials, Imperial College, London SW2BZ, UK*
- D-III/P11 *COMPOSITION, STRESS AND STRUCTURE OF Ge ISLANDS GROWN ON Si <100>, D. V. Regelman, V. Magidson, R. Beserman, Solid State Institute and Physics Department, Technion, 32000 Haifa, Israel, K. Dettmer, Institute of Semiconductor Physics and Optics, Technical University, Braunschweig, Germany*
- D-III/P12 *ORDERING AND SHAPE OF SELF-ASSEMBLED, INCOHERENT Ge ISLANDS ON Si <111>, R. Paniago, T.H. Metzger, M. Rauscher, J. Peisl, Universität München, Sektion Physik, Geschwister-Scholl Platz 1, 80539 München, Germany and I. Eisele, Universität der Bundeswehr, Werner Heisenberg Weg 39, 85579 Neubiberg, Germany*
- D-III/P13 *TEM STUDY OF SELF-ORGANIZATION PHENOMENA IN CdSe FRACTIONAL MONOLAYERS IN ZnSe MATRIX, A. Sitnikova, S. Sorokin, T. Shubina, I. Sedova, A. Toropov, S. Ivanov, Ioffe Physical-Technical Institute, 194021 St. Petersburg, Russia, M. Willander, University of Gothenburg/Chalmers University, 412 96 Gothenburg, Sweden*

SYMPOSIUM D

- D-III/P14 *STUDY OF InAs QUANTUM DOTS IN GaAs PREPARED ON MISORIENTED SUBSTRATES, E. Hulicius, J. Oswald, J. Pangrac, K. Melichar, T. Simecek, Institute of Physics, Academy of Sciences Cukrovarnicka 10, 162 53 Prague 6, Czech Republic*
- D-III/P15 *ALUMINUM NANOSTRUCTURES BY THERMAL AND STM-INDUCED CVD, E. Boellaard, C. Bisch, G.C.A.M. Janssen, Delft University of Technology, DIMES/S, Lorentzweg 1, 2628 CJ Delft, The Netherlands*
- D-III/P16 *EPITAXIAL GROWTH AT HIGH RATES WITH LEPECVD, C. Rosenblad, H. von Kinel, ETH Zürich, 8093 Zürich, Switzerland and J. Stangl, G. Bauer, Institut für Halbleiterphysik, Johannes Kepler Universität Linz, 4040 Linz, Austria*
- D-III/P17 *STRUCTURAL CHARACTERISATION OF SiGe STEP GRADED BUFFER LAYERS GROWN ON PRE-STRUCTURED Si(001) SUBSTRATES BY MOLECULAR BEAM EPITAXY, E. Müller, R. Hartmann, Ch. David, D. Grützmacher, Labor für Mikro- und Nanostrukturen, Paul-Scherrer Institut, 5232 Villigen, Switzerland*
- D-III/P18 *TEM INVESTIGATION OF THE DEPENDENCE OF STRUCTURAL DEFECTS ON PRELAYER FORMATION OF GaAs-ON-Si THIN FILMS, Ch.B. Lioutas, A. Delimitis and A. Georgakilas, Aristotle University of Thessaloniki, Department of Physics, 54006 Thessaloniki, Greece*
- D-III/P19 *STM STUDY ON STEP GRADED Si_{1-x}Ge_x/Si(001) BUFFERS, M. Kummer, B. Vögeli, and H. von Känel, Laboratory for Solid State Physics, HPF F15, 8093 Zürich, Switzerland*
- D-III/P20 *ION ASSISTED MBE GROWTH OF SiGe NANOSTRUCTURES, M. Bauer, M. Oehme, K. Lyutovich, E. Kasper, Institut für Halbleitertechnik, Universität Stuttgart, Pfaffenwaldring 47, 70569 Stuttgart, Germany*
- D-III/P21 *COALESCENCE OF GERMANIUM ISLANDS ON SILICON, C. Schöllhorn, M. Oehme, M. Bauer and E. Kasper, Institut für Halbleitertechnik, Universität Stuttgart, Pfaffenwaldring 47, 70569 Stuttgart, Germany*
- D-III/P22 *DISLOCATION PATTERN FORMATION IN EPITAXIAL STRUCTURES BASED ON SiGe ALLOYS, T.G. Yugova, Institute of Rare Metals; V. I. Vdovin, M.G. Mil'vidskii, Institute for Chemical Problems of Microelectronics, B. Tolmachevsky per. 5, 109017 Moscow, Russia; L.K. Orlov, V.A. Tolomasov, A. V. Potapov, Institute for Physics of Microstructures, Nizhny Novgorod, Russia; N. V. Abrosimov, Institute of Crystal Growth, Rudower Chaussee 6, 12489 Berlin, Germany*
- D-III/P23 *HETEROEPITAXY OF PbS ON POROUS SILICON, V. Levchenko, L. Postnova, Institute of Solid State and Semiconductor Physics, Brovka 17, 220072 Minsk, Belarus and V. Bondarenko, N. Vorozov, V. Yakovtseva, Belarusian State University of Informatics and Radioelectronics, Brovka 6, 220027 Minsk, Belarus*
- D-III/P24 *DEFECT DISTRIBUTION AND MORPHOLOGY DEVELOPMENT OF SiGe LAYERS GROWN ON Si(100) SUBSTRATES BY LPE, A. M. Sembian, M. Konuma, I. Silier, A. Gutjahr, N. Rollbuehler, Max-Planck-Institut fuer Festkoerperforschung, Heisenbergstr 1, 70569 Stuttgart, Germany, and F. Banhart, Max-Planck-Institut fuer Metallforschung, Heisenbergstr 1, 70569 Stuttgart, Germany*
- D-III/P25 *GROWTH AND ANNEALING OF CaF₂ FILMS ON VICINAL Si(111), J. Wollschläger, A. Klust and H. Pietsch, Institut für Festkörperphysik, Universität Hannover, Appelstr.2, 30167 Hannover, Germany*
- D-III/P26 *INFLUENCE OF STRESS ON GROWTH INSTABILITIES EVOLUTION ON SI SUBSTRATES, L. Lapena, L. Berbezier, CRMC2-CNRS, Campus de Luminy, Case 913, 13288 Marseille Cedex 9, France and B.A. Joyce, IRCSM, Imperial College of Science, Technology and Medicine, The Blackett Laboratory, Prince Consort Road, London SW7 2BZ, UK*
- D-III/P27 *EPITAXIALLY STABILIZED ULTRATHIN Sn/Si AND Si_{1-x}Sn_x/Si QUANTUM WELL HETEROSTRUCTURE SUPERLATTICES, K.S. Min and H.A. Atwater, T.J. Watson Laboratory of Applied Physics, California Institute of Technology, Pasadena CA 91125, USA*

SYMPOSIUM D

Wednesday June 17, 1998
 Mercredi 17 juin 1998

Afternoon
 Après-midi

SESSION V - Poster Session II : Growth
 17:00 - 18:30

- D-V/P1 DOMAIN WALL SPLITTING AND CREATION OF THE FINE DOMAIN STRUCTURE BY ALLOYING IN PZT, D. Fuks, Mater. Eng. Dept., POB 653, BGU, Beer Sheva, Israel; S. Dorfman, Dept. of Phys., Technion, 32000 Haifa, Israel; A. Gordon, Dept. of Math. and Phys., Haifa Uni. at Oranim, 36006 Tivon, Israel
- D-V/P2 IN-PLANE PARAMETER OSCILLATORY BEHAVIOUR DURING TWO-DIMENSIONAL HETERO-EPITAXY OF METALS, S. Andrieu, L. Hennot, M. Alnot, Laboratoire de Physique des Matériaux, UMR7556, CNRS-Université H. Poincaré, 54506 Vandœuvre, France
- D-V/P3 PULSED LASER DEPOSITION OF SmBaCuO THIN FILMS, A. Di Troia and A. Morone, CNR-Istituto per i Materiali Speciali, Area della Ricerca di Potenza, P.O. Box 13, 85050 Tito Scalo (PZ), Italy
- D-V/P4 EPITAXIAL ZIRCONIA FILMS ON SAPPHIRE SUBSTRATES, C. Mary, R. Guinebretière, G. Trolliard, B. Soulestin, and A. Dugger, Laboratoire de Matériaux Céramiques et Traitements de Surface, ESA CNRS 6015, ENSCI, 47 Avenue A. Thomas, 87065 Limoges, France
- D-V/P5 GROWTH AND MAGNETISM OF Co/NiO(111) THIN FILMS, C. Mocuta, A. Barbier, G. Renaud and B. Dieny, CEA-Grenoble, 17 Av. des Martyrs, 38054 Grenoble Cedex 9, France
- D-V/P6 EPITAXIAL GROWTH OF LiNbO₃ ON Al₂O₃ (0001), E. Veignant, M. Gandais, LMCP, Univ. P6 et P7, Case 115, 4 place Jussieu, 75252 Paris Cedex 05, France; P. Aubert*, G. Garry, LCR Thomson CSF, Domaine de Corbeville, 91404 Orsay Cedex, France (*present adress LEMFM, IUT d'Orsay, 91400 Orsay Cedex, France)
- D-V/P7 CONTROLLING THE INTRALAYER STRUCTURE IN Co/Pt-MULTILAYERS, P. Haibach, J. Köble, M. Huth, and H. Adrian, Inst. f. Physik, Johannes Gutenberg-Universität, 55099 Mainz, Germany
- D-V/P8 THE CHEMISORPTION - KINETIC MECHANISM OF THE COATINGS HETEROGENEOUS SYNTHESIS, A.G. Varlamov, Institute of Structural Macrokineics, RAS, Chernogolovka, Moscow region 142432, Russia
- D-V/P9 GAS-PHASE COMPOSITION ANALYSIS WITH IN-SITU METHOD IN SYSTEM GaAs-Bi-AsCl₃-HCl-H₂-He, V.A. Voronin, S.K. Guba, State University Lviv Polytechnic, Dept. Semiconductors Electronic, Bandera Street Lviv-13, 290646, Ukraine
- D-V/P10 FABRICATION AND ELECTRICAL PROPERTIES OF SOL-GEL DERIVED (BaSr)TiO₃ THIN FILMS WITH METALLIC LaNiO₃ ELECTRODE, Di Wu*, Aidong Li*, Zhiguo Liu**, ChuanZhen Ge*, Peng Lu* and Naiben Ming**, *National Laboratory of Solid State Microstructures, Nanjing University, Nanjing 210093, P.R. China; **Center for Advanced Studies in Science and Technology of Microstructures, Nanjing 210093, China
- D-V/P11 TWO-DIMENSIONAL AND ZERO-DIMENSIONAL STRUCTURES OF SEMIMAGNETIC SEMICONDUCTORS PREPARED BY PULSED LASER DEPOSITION, A.I. Savchuk, I.D. Stolyarchuk, S.V. Medynskiy, Dept. of Phys. Electronics, University of Chernivsi, 274012 Chernivsi, Ukraine; A. Perrone, Dept. of Physics, University of Lecce, National Institute of Matter Physics, 73100 Lecce, Italy and P.I. Nikitin, General Physics Institute, 117942 Moscow, Russia
- D-V/P12 EPITAXIAL GROWTH OF MULTICOMPONENT FILMS AT LASER DEPOSITION: EFFECT OF FILM-SUBSTRATE LATTICE MISMATCH, Y.D. Varlamov, M.R. Predtechensky, O.M. Tukhto, Institute of Thermophysics, av. Lavrentyeva 1, 630090 Novosibirsk, Russia
- D-V/P13 RHEED INVESTIGATION OF LIMITING THICKNESS EPITAXY DURING LOW TEMPERATURE Si-MBE ON (100) SURFACE, A.I. Nikiforov, B.Z. Kanter and O.P. Pchelyakov, Institute of Semiconductor Physics, Russian Academy of Sciences, Siberian Branch, Lavrentjeva 13, 630090 Novosibirsk, Russia
- D-V/P14 THE INFLUENCE OF GROWTH TEMPERATURE ON THE PERIOD OF RHEED OSCILLATIONS DURING MBE OF Si AND Ge ON (111) SURFACE, A.I. Nikiforov, V.A. Markov, V.A. Cherepanov* and O.P. Pchelyakov, Institute of Semiconductor Physics, Russian Academy of Sciences, Siberian Branch, Pr. Ac. Lavrentjeva 13, 630090 Novosibirsk, Russia ; *Novosibirsk State University, Russia
- D-V/P15 FORMATION OF INTERFACES AND EPITAXIAL THIN FILMS ON CLEAVAGE SURFACES OF II-VI CRYSTALS IN VARIOUS GASEOUS ATMOSPHERES, P.V. Galiy, I. V. Kurilo*, T. M. Nenchuk, I. O. Rudyi*, O. I. Vlasenko**, J. M. Stakhira, Physical Department, Lviv State University, 50 Dragomanov str., 290005 Lviv, Ukraine, *Department of Semiconductor Electronics, State University «Lviv Polytechnic», 12 S. Bandera str., 290013 Lviv, Ukraine, **Institute of Semiconductor Physics NAS Ukraine, 45 Prospekt Nauky, 252650 Kyiv, Ukraine

SYMPOSIUM D

- D-V/P16 **NONSEGREGATING $\text{In}_{1-x}\text{Ga}_x\text{P}$ PSEUDOMORPHIC EPILAYERS ON GaAs SUBSTRATES**, I.S. Chikichev, Novosibirsk State University, Department of Mathematics and Mechanics, Pirogov Street 2, 630090 Novosibirsk, Russia and S.I. Chikichev, Institute of Semiconductor Physics, Russian Academy of Sciences, Siberian Branch, Academician Lavrentiev Avenue 13, 630090 Novosibirsk, Russia
- D-V/P17 **ELECTRICAL PROPERTIES OF HgCdTe FILMS OBTAINED BY LASER DEPOSITION**, L. Vîrt, Section of Experimental Physics, Pedagogical Institute, Gogol 34, 293-720 Drogoibich, Ukraine; G. Wysz, M. Kuzma, Institute of Physics, Higher Pedagogical School, Rejtana 16a, 35-309 Rzeszow, Poland
- D-V/P18 **THE GROWTH KINETICS OF $\text{Si}_{1-x}\text{Ge}_x$ LAYERS IN GeH_4 -Si MBE**, L.K. Orlov, V.A. Tolomasov, A.V. Potapov, Institute for Physics of Microstructures, RAS, GSP-105, 603600 Nizhny Novgorod, Russia
- D-V/P19 **THE GROWTH KINETICS OF $\text{Si}_{1-x}\text{Ge}_x$ LAYERS FROM GeH_4 AND SiH_4** , L.K. Orlov, A.V. Potapov, S.V. Ivin, Institute for Physics of Microstructures, RAS, GSP-105, 603600 Nizhny Novgorod, Russia
- D-V/P20 **CRYSTAL MICROSTRUCTURE OF PbTe/Si AND Pb Te/SiO/Si THIN FILMS**, Y.A. Ugai, A.M. Samoylov, A.V. Tadeev, M.K. Sharov, Voronezh State University, Universitetskaya Sq. 1, 394693 Voronezh, Russia
- D-V/P21 **ON THE GROWTH OF EPITAXIAL CoSi_2 BY THE SOLID PHASE REACTION OF Co/METAL BILAYERS WITH Si(001)**, M. Falke, B. Gebhardt, G. Beddies, S. Teichert, H.-J. Hinneberg, Institute of Physics, Chemnitz University of Technology, 09107 Chemnitz, Germany
- D-V/P22 **ATOMIC LAYER EPITAXY OF SiGe:C BY LP(RT) CVD**, B. Tillack, E. Bugiel, D. Krüger, R. Kurps, K. Glawatz, Institute of Semiconductor Physics, Walter-Korsing-Str. 2, 15230 Frankfurt (Oder), Germany
- D-V/P23 **ATOMIC ORDERING IN $\text{Cd}(1-x)\text{Zn}_x\text{Te}$ DEPOSITED BY MOCVD**, K. Cohen, S. Stolyarova, N. Amir, Y. Nemirowsky, Kidron Microelectronics Research Center, Department of Electrical Engineering, Technion - Haifa 32000, Israel. R. Beserman, A. Chack and R. Weil, Solid State Institute, Department of Physics, Technion - Haifa 32000, Israel
- D-V/P24 **HEAVY DOPING CHARACTERISTICS OF P AND B IN $\text{Si}_{1-x}\text{Ge}_x$ EPITAXIAL FILMS**, J. Murota, A. Moriya, M. Sakuraba, T. Matsuura, Res. Inst. of Electr. Comm., Tohoku Univ., Sendai 980-8577, Japan
- D-V/P25 **DYNAMICS OF INTERDIFFUSION IN STRAINED Si/Ge SUPERLATTICES OF NANOMETER PERIODS**, Yu. L. Khaït, R. Beserman, W. Freiman, Solid State Institute, Technion, Haifa, Israel and K. Dettmer, Institute of Semiconductor Physics, T.U. Braunschweig, Germany
- D-V/P26 **DIFFUSION OF Cd, Mg AND S IN ZnSe-BASED QUANTUM WELL STRUCTURES**, M. Kuttler, M. Straßburg, U. W. Pohl, D. Bimberg, Technische Universität Berlin, Hardenbergstr. 36, 10623 Berlin, Germany
- D-V/P27 **EPITAXIAL GROWTH OF ZnS ON CdS IN CdS/ZnS NANOSTRUCTURES**, C. Ricolleau, L. Audinet, M. Gandais, LMCP, Univ. P6 et P7, Case 115, 4 place Jussieu, 75252 Paris Cedex 05 and T. Gacoin, LPMC, Ecole Polytechnique, 91128 Palaiseau, France
- D-V/P28 **CORRELATION BETWEEN THE SIGN OF STRAIN AND THE SURFACE MORPHOLOGY AND DEFECT STRUCTURE OF InAlAs GROWN ON VICINAL (111)B InP**, A. Georgakilas, K. Harteros, K. Tsagaraki, Z. Hatzipoulos, Univ. Crete and FORTH, Iraklion, Greece; A. Villa, N. Becourt, F. Peiro, A. Comet, Univ. Barcelona, Barcelona, Spain; N. Chrysanthakopoulos and M. Calamiotou, Univ. Athens, Athens, Greece
- D-V/P29 **ALLOTAXY IN THE SYSTEM Ni-Si**, S. Teichert, M. Falke, H. Giesler, G. Beddies and H.-J. Hinneberg, Institute of Physics, Chemnitz University of Technology, 09107 Chemnitz, Germany
- D-V/P30 **ION BEAM DEPOSITION OF NANOCRYSTALLINE AND EPITAXIAL SILICON FILMS**, H.R. Khan, FEM, Material Physics Department, Schwaebisch Gmünd, Germany and H. Frey, Loet und Schweißgeräte GmbH, 73773 Aichwald, Germany
- D-V/P31 **FORMATION AND STABILITY OF ERBIUM-SILICIDE GROWN EPITAXIALLY ONTO $\text{Si}(100)2\times 1$ SURFACE**, G. Peto, G.L. Molnar, I. Eördögh, Z.E. Horvath, E. Zsoldos, J. Gyulai, MTA Research Institute for Technical Physics and Materials Science, 1525 Budapest, PO Box 49, Hungary
- D-V/P32 **INFLUENCE OF GROWN-IN DEFECTS ON THE OPTICAL AND ELECTRICAL PROPERTIES OF $\text{Si}/\text{Si}_{1-x}\text{Ge}_x/\text{Si}$ HETEROSTRUCTURES**, R. Leo, M. Caymax, E. Simoen, D. Howard*, IMEC, Kapeldreef 75, 3001 Leuven, Belgium; *present address: Rockwell Semiconductor Systems, Newport Beach, CA 92660-3095, USA; M. Goryll, P. Klaes, L. Vescan, ISI-Research Centre Jülich GmbH, 52325 Jülich, Germany; D. Graveteijn, Philips Research Laboratories, P.O. Box 80000, 5500 JA Eindhoven, The Netherlands; H. Pettersson, Department of Solid State Physics, Lund University, P.O. Box 118, 22100 Lund, Sweden
- D-V/P33 **LOW TEMPERATURE EPITAXIAL GROWTH OF Si ON Si (111) BY-GAS-SOURCE MBE WITH CYCLIC THERMAL ANNEALING**, Takashi Ishikawa, Hiroshi Okumura, Toshimitsu Akane, Masashi Sano, Satoru Matsumoto, Dept. of Elec. Eng., Keio Univ., Hiyoshi Yokohama 223, Japan

SYMPOSIUM D

- D-V/P34** *STRONG SURFACE SEGREGATION OF Sb ATOMS AT LOW TEMPERATURES DURING Si MOLECULAR BEAM EPITAXY*, Z.M. Jiang, C.W. Pei, L.S. Liao, J. Qin and Xun Wang, Surface Physics Laboratory, Fudan University, Shanghai 200433, China; Q.J. Jia, X.M. Jiang, BSRF, Ins. High Energy Phys., China; Z.H. Mao, I.K. Sou, Dept. of Phys., USTHK, UK
- D-V/P35** *HETEROSTRUCTURES ZnSe-PbS: BASIS FOR NEW DEVICE CONCEPT*, G. Khlyap, M. Andrukhiv, Pedagogical Institute, 24 Franko str., Drogobych 293720, Ukraine
- D-V/P36** *EPITAXIAL GROWTH OF Fe/Tb AND Tb/Fe BILAYERS ON Nb(110)/Al₂O₃(11-20)*, E. Richomme, T. Ruckert*, W. Keune*, J. Teillet, Laboratoire de Magnétisme et Applications, UMR 6634, Faculté des Sciences de Rouen, 76821 Mont-Saint-Aignan Cedex, France, *Laboratorium für Angewandte Physik, Gerhard-Mercator Universität Duisburg, 47048 Duisburg, Germany.

SYMPOSIUM D

Friday, June 19, 1998
Vendredi 19 Juin 1998

Afternoon
Après-midi

SESSION IX - Poster Session III: Analysis
14:10 - 15:30

- D-IX/P1 DETERMINATION OF LIGHT AMPLIFICATION PROCESSES IN MOCVD GROWN ZNCDS GRINSCH STRUCTURES, L. Mikulskas, D. Brinkmann*, K. Luterova**, R. Tomasianas, B. Hönerlage*, J.V. Vaitkus, R.L. Aulombard***, and T. Cloitre***, Institute of Materials Science and Applied Research, Vilnius University, Saulėtekio 10, 2040 Vilnius, Lithuania, *Institut de Physique et Chimie des Matériaux de Strasbourg, Groupe d'Optique Non Linéaire et d'Optoélectronique, UMR 46 CNRS-ULP-ECPM, 23, rue du Loess, B.P. 20 CR, 67037 Strasbourg Cedex, **Institute of Physics, Academy of Sciences of the Czech Republic, Cukrovarnicka 10, 16200 Praha, Czech Republic, ***Groupe d'Etudes des Semiconducteurs, Case Courrier 074, Université de Montpellier II, place Eugene Bataillon, 34095 Montpellier Cedex 05, France
- D-IX/P2 CdS/InP POLARIMETRIC PHOTODETECTORS, V. Yu. Rud', State Technical University, 29 Polytekhnicheskaya st., 195251 St. Petersburg, Russia and V.M. Botnaryuk, State University, Kishinev, Moldova
- D-IX/P3 ADATOM DIFFUSION ON 3C-SiC(111) SURFACES, D. Stock, Friedrich-Schiller-Universität Jena, Institut für Festkörperphysik, Max-Wien-Platz 1, 07743 Jena, Germany
- D-IX/P4 HOLE MOBILITIES IN PSEUDOMORPHIC $\text{Si}_{1-x}\text{Ge}_x$ ALLOY LAYERS, R. Duschl, H. Seeberger and K. Eberl, Max-Planck-Institut für Festkörperforschung, Heisenbergstraße 1, 70569 Stuttgart, Germany
- D-IX/P5 CHARACTERISATION OF MODULATION DOPED QUANTUM WELL STRUCTURES GROWN BY RF MAGNETRON SPUTTER EPITAXY, T. Graf, B. Vögeli, H. von Känel, Laboratory for Solid State Physics, HPF F15, 8093 Zürich, Switzerland; J. Stangl, G. Bauer, Johannes Kepler Universität Linz, Inst. for Semiconductor Physics, Altenbergstr. 69, 4040 Linz, Austria; J. Schulze, I. Eisele, Universität der Bundeswehr München, Werner Heisenberg Weg 39, 85579 Neubiberg, Germany
- D-IX/P6 THIN TANTALUM PENTOXIDE FILMS DEPOSITED BY PHOTO-INDUCED CVD, Jun-Ying Zhang, Boon Lim and I.W. Boyd, Electronic & Electrical Engineering, University College London, Torrington Place, London WC1E 7JE, UK
- D-IX/P7 NONLINEARITY OF RESONANT TUNNELING THROUGH DEGENERATE STATE OF THE QUANTUM WELL, V.N. Ernakov and E.A. Ponezha, Bogolyubov Institute for Theoretical Physics, NASU, 252143 Kiev 143, Ukraine
- D-IX/P8 TUNNELING CURRENTS IN VERY NARROW P+-N+ JUNCTIONS, G. Reitemann, E. Kasper, University of Stuttgart, H. Kibbel, H. Jorke, Daimler Benz Research Center, Ulm, Germany
- D-IX/P9 OPTICAL ON WAFER MEASUREMENT OF Ge CONTENT OF VIRTUAL SiGe-SUBSTRATES, M. Oehme and M. Bauer, Institut für Halbleitertechnik, Universität Stuttgart, Pfaffenwaldring 47, 70569 Stuttgart, Germany
- D-IX/P10 CHARACTERISATION OF A $(\text{Si}_x\text{Ge}_{1-x})_{16}$ SHORT-PERIOD SUPERLATTICE BY X-RAY DIFFRACTION AND ELECTRON MICROSCOPY METHODS, K.D. Chicherbachev, Moscow State Institute of Steel and Alloys, Russia, O.A. Mironov*, P.J. Phillips, E.H.C. Parker, University of Warwick, UK and A. Romano-Rodriguez, A. Perez-Rodriguez, J.R. Morante, Universitat de Barcelona, Spain, (*also IRE NAS of Ukraine, Kharkiv, Ukraine)
- D-IX/P11 COMPUTER SIMULATION OF DEEPENING PORES SYSTEM IN SILICON, R.V. Bochkova, V.I. Dyakonova, V.N. Gorohov, Pedagogical Institute, 430007, Saransk, Studencheskaya Street, 11a, Mordovia, Russia
- D-IX/P12 THE OSCILLATORIC SECOND HARMONIC DEPENDENCE OF THE DC ELECTRIC FIELD FROM THE Si-SiO_2 MULTIPLE QUANTUM WELLS, A.N. Rubtsov, V.V. Savkin, Department of Physics, Moscow State University, Moscow 119899, Russia
- D-IX/P13 ON THE DETERMINATION OF e_{14} IN (111)B-GROWN (In,Ga)As/GaAs STAINED LAYERS, Ph. Ballet, P. Disseix, J. Leymarie, A. Vasson, A.-M. Vasson, LASMEA, UMR 6602 du CNRS, 63177 Aubière, France and R. Grey, Department of Electrical and Electronic Engineering, The University of Sheffield, Mappin Street, Sheffield S1 3JD, UK
- D-IX/P14 PHOTOLUMINESCENCE STUDIES OF As-P EXCHANGE IN GaAs/GaInP2 QUANTUM WELLS GROWN BY CHEMICAL BEAM EPITAXY, A. Aurand, J. Leymarie, A. Vasson, A.-M. Vasson, LASMEA, UMR 6602 du CNRS, 63177 Aubière, France and M. Mesrine, C. Deparis, M. Leroux, CRHEA-CNRS, Rue Bernard Gregory, Parc Sophia Antipolis, 06560 Valbonne, France
- D-IX/P15 CHARACTERISATION OF INHOMOGENEOUS FILMS BY MULTIPLE-ANGLE ELLIPSOMETRY, S. Colard and M. Mihailovic, LASMEA, UMR 6602 CNRS, Université Blaise Pascal de Clermont-Ferrand, Les Cèzeaux, 24 avenue des Landais, 63177 Aubière Cedex, France

SYMPOSIUM D

- D-IX/P16** *MAGNETOLUMINESCENCE MEASUREMENTS OF TWO-DIMENSIONAL HOLE GAS IN MAGNETIC FIELD, M. Ciorga, L. Bryja, J. Misiewicz, Wrocław University of Technology, Institute of Physics, Wyspiańskiego 27, 50-370 Wrocław, Poland; O.P. Hansen, University of Copenhagen, Denmark*
- D-IX/P17** *OPTICAL STUDY OF THE INDIUM ACCUMULATION IN STRAINED QUANTUM WELLS, F. Hassen, H. Sghaier, H. Maaref and R. Murray*, Laboratoire de Physique des Semiconducteurs, Département de Physique, Faculté des Sciences, 5000 Monastir, Tunisia; *IRC Semiconductor Materials Imperial College, London SW2BZ, UK*
- D-IX/P18** *COMPUTER SIMULATION OF AlGaAs/GaAs SUPERLATTICES GROWTH BY LPE, R.Kh. Akchurin, A.A. Voshkin, Moscow State Academy of Fine Chemical Technology, Vernadskogo pr., 86, 117571 Moscow, Russia*
- D-IX/P19** *RAMAN CHARACTERIZATION OF STRAIN RELAXATION EFFECTS IN HIGHLY-DOPED p-TYPE GaAs/GaAsP EPITAXIAL LAYERS, A.V. Subashiev, State Technical University, 195251 St. Petersburg, Russia, V. Yu. Davydov, I. N. Goncharuk, A. N. Smirnov, O. V. Kovalenkov, and D. A. Vinokurov, Ioffe Physicotechnical Institute, 194021 St Petersburg, Russia*
- D-IX/P20** *Al/Al₂O₃ MULTILAYERS DEPOSITION / RELATIONSHIP TO ELECTRICAL AND MECHANICAL PROPERTIES, C. Le Paven, S. Labdi, Ph. Houdy, L.M.N. Université d'Evry Val d'Essonne, Boulevard des Coquibus, 91025 Evry Cedex, France*
- D-IX/P21** *OBSERVATION OF CONFINED AND INTERFACE PHONONS IN GaAs/AlAs SUPERLATTICES GROWN BY MBE ON FACETED (311)A,B AND (100) SURFACES, V.A. Volodin, M.D. Efremov, V.V. Preobrazhenski, B.R. Semyagin, Institute of Semiconductor Physics SB RAS, pr. Lavrentjeva 13, Novosibirsk 630090, Russia ; V.V. Bolotov, V.A. Sachkov, Institute of Sensor Microelectronics SB RAS, pr. Mira 55a, Omsk 1 644077, Russia*
- D-IX/P22** *RAMAN STUDY OF OPTICAL PHONONS CONFINED IN QUANTUM OBJECTS FORMED BY MBE OF GaAs/AlAs SUPERLATTICES CONTAINING GaAs SUBMONOLAYERS ON (311)A,B AND (100) SURFACES, V.A. Volodin, M.D. Efremov, V.V. Preobrazhenski, B.R. Semyagin, Institute of Semiconductor Physics SB RAS, pr. Lavrentjeva 13, Novosibirsk 630090, Russia ; V.V. Bolotov, V.A. Sachkov, Institute of Sensor Microelectronics SB RAS, pr. Mira 55a, Omsk 1 644077, Russia*
- D-IX/P23** *OPTICAL STUDIES OF CARRIER TRANSPORT PHENOMENA IN CdSe/ZnSe FRACTIONAL MONOLAYER SUPERLATTICES, T.Y. Shubina, A.A. Toropov, S.V. Ivanov, S.V. Sorokin, P.S. Kop'ev, Ioffe Physico-Technical Institute, 194021 St. Petersburg, Russia and G. Posina, J.P. Bergman, B. Monemar, University of Linköping, 581 83 Linköping, Sweden*
- D-IX/P24** *ELECTRIC-FIELD-INDUCED RAMAN SCATTERING AT ZnSe/GaAs INTERFACES, O. Pagès, A. Zaoui, M. Certier, J.P. Laurenti, D. Bormann*, B. Khelifa*, O. Briot** and R.L. Aulombard**, Laboratoire de Spectrométrie Optique de la Matière, Université de Metz, 1 Bd Arago, 57078 Metz, France, *Equipe de Spectrométrie Raman, Université d'Artois, Rue Jean Souvraz, 62307 Lens, France, **Groupe d'Etude des Semiconducteurs, associé au CNRS (URA 357), Université des Sciences et Techniques du Languedoc, Place Eugène Bataillon, 34095 Montpellier, France*
- D-IX/P25** *TRANSMISSION ELECTRON MICROSCOPY STUDY ON Cu-Ni-SiO₂ THIN FILM ELECTRICAL RESISTORS, J.L.M. Donkers, Philips Centre for Manufacturing Technology, J.J. van den Broek and R.A.F. van der Rijt, Philips Research, Eindhoven, The Netherlands*
- D-IX/P26** *TEM AND AFM STUDY OF PEROVSKITE CONDUCTIVE LaNiO₃ THIN FILMS PREPARED BY METALORGANIC DECOMPOSITION, Aidong Li*, Di Wu*, Zhiguo Liu*,**, ChuanZhen Ge*, Peng Lu* and Naiben Ming*,**, *National Laboratory of Solid State Microstructures, Nanjing University, Nanjing 210093, P.R. China; **Center for Advanced Studies in Science and Technology of Microstructures, Nanjing 210093, China*
- D-IX/P27** *ADHESIVE AND VIBRATORY PHENOMENA AT SHOCK OF METALLIC NANOPARTICLES STUDIED BY MOLECULAR DYNAMICS SIMULATION, V.V. Pokropivny, V.V. Skorokhod, Institute for Problems of Materials Science, 252142 Kiev, Ukraine and A.V. Pokropivny, Yu.G. Krasnikov, Moscow Institute of Physics and Technology, 141700 Dolgoprudny, Russia*
- D-IX/P28** *STUDY OF SURFACE SPIN ORDER IN EPITAXIAL PEROVSKITE MANGANITE THIN FILMS, M.B. Hunt, A. Llobet and L. Ranno, Laboratoire Louis Néel, Polygone CNRS, BP 166, 25 avenue des Martyrs, 38042 Grenoble Cedex 09, France and R. Borges, Physics Department, Trinity College, Dublin, Ireland*

E-MRS'98 SPRING MEETING



SYMPOSIUM E

Thin Film Materials for Large Area Electronics

Symposium Organizers

- | | |
|---------------------|----------------------------------------------------------------|
| B. EQUER | Ecole Polytechnique, Lab. PICM, Palaiseau, France |
| B. DREVILLON | Ecole Polytechnique, Lab. PICM, Palaiseau, France |
| I. FRENCH | Philips Research Lab., Redhill, UK |
| T. KALLFASS | Inst. für Netzwerk und Systemtheorie, Univ. Stuttgart, Germany |

SYMPOSIUM E

Tuesday, June 16, 1998
Mardi 16 juin 1998

Morning
Matin

SESSION I - Microcrystalline and Amorphous Silicon: Plasma Deposition
Chairperson: B Equer, LPICM, Ecole Polytechnique, Palaiseau, France

- | | | | |
|-------|-------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E-I.1 | 9:00-9:40 | - Invited - | <i>GROWTH MECHANISM OF MICROCRYSTALLINE SILICON OBTAINED FROM REACTIVE PLASMAS. A. Matsuda, Electrotechnical Laboratory, 1-1-4 Umezono, Tsukuba, 305-8568 Japan</i> |
| E-I.2 | 9:40-10:00 | | <i>DEVICE QUALITY MICROCRYSTALLINE SILICON DEPOSITED FROM SiF₄/H₂ MIXTURES AT LOW TEMPERATURE, R. Brenot, B. Drévilon, P. Roca I Cabarrocas and R. Vanderhaghen, Laboratoire de Physique des Interfaces et des Couches Minces, UMR 7647 du CNRS, Ecole Polytechnique, 91128 Palaiseau Cedex, France</i> |
| E-I.3 | 10:00-10:20 | | <i>PROPERTIES OF POLYCRYSTALLINE SILICON FILMS PREPARED FROM FLUORINATED PRECURSORS, Swati Ray, Sukti Hazra, Energy Research Unit, Indian Association for the Cultivation of Science, Jadavpur, Calcutta 700 032, India</i> |
| E-I.4 | 10:20-10:40 | | <i>CONTROL OF HIGH DENSITY PLASMA WITH NO MAGNETIC FIELD FOR LARGE-SCALED ELECTRONICS, H. Shirai and T. Arai, Saitama University, 255, Shimo-Okubo, Urawa-shi, Saitama, 338, Japan</i> |
| | 10:40-11:20 | | BREAK |
| E-I.5 | 11:20-11:40 | | <i>CONTROL OF ORIENTATION FROM RANDOM TO (220) OR (400) ORIENTATION IN POLYCRYSTALLINE SILICON FILMS, T. Kamiya, K. Nakahata, A. Miida, C.M. Fortmann and I. Shimizu, The Graduate School, Tokyo Institute of Technology, 4259 Nagatsuta, Midori-ku, Yokohama 226-8502, Japan</i> |
| E-I.6 | 11:40-12:00 | | <i>MICROCRYSTALLINE SILICON GROWTH ON a-Si:H: EFFECTS OF HYDROGEN, P. Roca I Cabarrocas and S. Hamma, Laboratoire PICM (UPR 258 CNRS), Ecole Polytechnique, 91128 Palaiseau, France</i> |
| E-I.7 | 12:00-12:20 | | <i>STRUCTURE OF POLYCRYSTALLINE Si FILMS DEPOSITED AT LOW TEMPERATURE BY PLASMA CVD ON SUBSTRATES EXPOSED TO DIFFERENT PLASMA, S. Moniruzzaman, R. Tsuchida, Y. Kurata, T. Inokuma and S. Hasegawa, Faculty of Engineering, Kanazawa University, Kanazawa 920, Japan</i> |
| | 12:20-14:00 | | LUNCH |

SYMPOSIUM E

Tuesday June 16, 1998

Mardi 16 juin 1998

Afternoon

Après-midi

SESSION I - Microcrystalline and Amorphous Silicon: Plasma Deposition (continued)

Chairperson: B. Equer, LPICM, Ecole Polytechnique, Palaiseau, France

- E-I.8 14:00-14:20 *DEPOSITION DEFECT AND WEAK BOND FORMATION PROCESSES IN a-Si:H, J. Robertson, Engineering Dept., Cambridge University, Cambridge CB2 1PZ, UK; M.J. Powell, Philips Research Labs, Redhill, Surrey RH1 5HA, UK*
- E-I.9 14:20-14:40 *DEPOSITION OF MICROCRYSTALLINE SILICON AND SILICON ALLOYS IN AN INTEGRATED DISTRIBUTED ELECTRON CYCLOTRON RESONANCE PECVD REACTOR, P. Bulkin, A. Hofrichter, R. Brenot and B. Drévillon, Laboratoire de Physique des Interfaces et des Couches Minces, UMR 7647 du CNRS, Ecole Polytechnique, 91128 Palaiseau Cedex, France*
- E-I.10 14:40-15:00 *HYDROGENATED AMORPHOUS AND NANOCRYSTALLINE P TYPE SILICON FILMS, DEPOSITED BY HOT WIRE AND PECVD TECHNIQUES, H. Aguas, I. Ferreira V. Silva, E. Fortunato, R. Martins, DCM/FCT-UNL, Quinta da Torre, 2825 Monte de Caparica, Portugal*

SESSION II - Microcrystalline and Amorphous Silicon: Laser Crystallisation

Chairperson: B. Drévillon, LPICM, Ecole Polytechnique, Palaiseau, France

- E-II.1 15:00-15:40 - Invited - *ADVANCED EXCIMER LASER PROCESSES FOR SILICON THIN-FILM TRANSISTOR, M. Matsumura, Department of Physical Electronics, Tokyo Institute of Technology, O-okayama, meguro-Ku, Tokyo 152-8550, Japan*
- E-II.2 15:40-16:00 *LARGE-GRAINED POLYCRYSTALLINE SILICON ON GLASS BY COPPER VAPOR LASER ANNEALING, J.R. Köhler, R. Dassow, R. B. Bergmann and J.H. Werner, Universität Stuttgart, Institut für Physikalische Elektronik, Pfaffenwaldring 47, 70569 Stuttgart, Germany*
- 16:00-16:30 **BREAK**
- E-II.3 16:30-16:50 *SINGLE SHOT EXCIMER LASER CRYSTALLIZATION AND LPCVD SILICON TFT's, Y. Ellen, K. Mourgues, F. Kaout, T. Mohammed-Brahim, O. Bonnaud, P. Boher*, D. Zahorski*, GMV, UPRESA au CNRS 6076, Université Rennes I, Campus de Beaulieu, 35042 Rennes Cedex, France; *SOPRA S.A., 26 rue P. Joigneux, 92270 Bois Colombes, France*
- E-II.4 16:50-17:10 *SINGLE AREA EXCIMER LASER CRYSTALLIZATION OF AMORPHOUS SILICON FOR FLAT PANEL DISPLAY APPLICATIONS, P. Boher, D. Zahorski and M. Stehle, SOPRA S.A., 26 rue Pierre Joigneux, 92270 Bois-Colombes, France*
- E-II.5 17:10-17:30 *LATERAL GROWTH CONTROL IN EXCIMER LASER CRYSTALLISED POLYSILICON, L. Mariucci, R. Carluccio, A. Pecora, G. Fortunato, IESS-CNR, via Cineto Romano 42, 00156 Roma, Italy; P. Legagneux, D. Pribat, THOMSON-CSF, LCR, 91404 Orsay, France; D. Della Sala, ENEA Casaccia, Roma, Italy; J. Stoemenos, University of Thessaloniki, Greece*
- E-II.6 17:30-17:50 *SURFACE MELT DYNAMICS AND SUPER LATERAL GROWTH (SLG) REGIME IN LONG PULSE DURATION EXCIMER LASER CRYSTALLIZATION OF AMORPHOUS Si FILMS, E. Fogarassy, S. de Unamuno, CNRS, Laboratoire PHASE (UPR 292), BP 20, 67037 Strasbourg Cedex 2, France; P. Legagneux, F. Plais, D. Pribat, THOMSON LCR, Domaine de Corbeville, 91404 Orsay Cedex, France; B. Godard, M. Stehle, SOPRA SA, 26 rue Pierre Joigneux, 92270 Bois Colombes, France*

SYMPOSIUM E

E-II.7 17:50-18:10

APPLICABILITY OF RAMAN SCATTERING FOR THE CHARACTERIZATION OF NANO- CRYSTALLINE SILICON, S. Yeprek, Ch. Ossadnik, Institute for Chemistry of Inorganic Materials, Technical University Munich, Lichtenbergstr. 4, 85747 Garching, Germany and I. Gregora, Institute of Physics, Czech Academy of Sciences, Na Slovance 2, 18040 Prague 8, Czech Republic

E-II.8 18:10-18:30

STABILITY AND TRANSPORT PROPERTIES OF MICROCRYSTALLINE $\text{Si}_{1-x}\text{Ge}_x$ FILMS, E. Edelman, T. Raz, Y. Komem, Materials Engineering Faculty, Technion, 32000 Haifa, Israel, M. Stolzer, Martin-Luther-Universitat, Halle (Saale), Germany, P. Werner, Max-Planck-Institut für Mikrostrukturphysik, Halle (Saale), Germany, P. Zaumseil, H.-J. Osten, J. Griesche, Institut für Halbleiterphysik, Frankfurt (Oder), Germany, and M. Capitan, ESRF, Grenoble, France

SYMPOSIUM E

Wednesday June 17, 1998

Afternoon

Mercredi 17 juin 1998

Après-midi

SESSION III - Thin-Film Transistors

Chairperson: I. French, Philips Research Laboratories, Redhill, UK

- E-III.1** 14:00-14:40 - *Invited* - **LASER CRYSTALLISED POLY-Si TFTs FOR AMLCDs**, S.D. Brotherton, J.R. Ayres, M.J. Edwards, C.A. Fisher, J.P. Gowers, D.J. McCulloch, M. Trainor, Philips Research Laboratories, Redhill, Surrey RH1 5HA, UK
- E-III.2** 14:40-15:00 **TFT ANNEALING WITH EXCIMER LASER - TECHNOLOGY AND MARKET OUT-LOOK**, W. Staudt, S. Borneis, K-D. Pippert, Lambda Physik GmbH, Hans-Bockler-Str. 12, 37079 Göttingen, Germany
- E-III.3** 15:00-15:20 **TEMPERATURE ANALYSIS OF POLYSILICON THIN-FILM TRANSISTORS MADE BY EXCIMER LASER CRYSTALLIZATION**, V. Foglietti, L. Mariucci and G. Fortunato, IESS-CNR, Via Cineto Romano 42, 00156 Roma, Italy
- E-III.4** 15:20-15:40 **COPLANAR AMORPHOUS SILICON THIN FILM TRANSISTOR FABRICATED BY INDUCTIVELY-COUPLED PLASMA CVD**, Sung Ki Kim, Se Il Cho, Young Jin Choi, Kyu Sik Cho and Jin Jang, Departments of Physics, Kyung Hee University, Dongdaemoon-ku, Seoul, 13-701, Korea; S.M. Pietruszko, Warsaw University of Technology, IMiO PW, Koszykowa 75, 00-662 Warsaw, Poland
- E-III.5** 15:40-16:00 **ION IMPLANTATION OF MICROCRYSTALLINE SILICON FOR LOW PROCESS TEMPERATURE TOP GATE TFTs**, Y. Chu, H. Silva, INESC, Lisboa, Portugal; L. Redondo, C. Jesus, M.F. Silva, J.C. Soares, ITN, Sacavém, Portugal, and J.P. Conde, Department of Materials Engineering, Instituto Superior Técnico, Lisboa, Portugal
- E-III.6** 16:00-16:20 **ELECTRONIC PROPERTIES OF BOTTOM GATE SILICON NITRIDE/HYDROGENATED AMORPHOUS SILICON STRUCTURES**, J.P. Kleider, C. Longeaud, and F. Dayoub, L.G.E.P.-E.S.E. (CNRS,URA 127), Plateau de Moulon, 91192 Gif sur Yvette Cedex, France
- 16:20-17:00 **BREAK**

POSTER SESSION I

17:00-19:00 *See programme of this poster session p. E-8 to p. E-10.*

SYMPOSIUM E

Thursday June 18, 1998
Jeudi 18 juin 1998

Morning
Matin

SESSION IV - Large Area Sensors and Other Devices

Chairperson: T.Kallfass, *Labor für Bildschimtechnik, Institut für Netzwerk und Systemtheorie, Universität Stuttgart, Stuttgart, Germany*

- E-IV.1 8:30- 9:10 - Invited - *LARGE AREA X-RAY DETECTORS BASED ON AMORPHOUS SILICON TECHNOLOGY, J.P. Moy, Trixell, ZI Centr'Alp, 460 rue de Pommarin, 38430 Moirans, France*
- E-IV.2 9:10- 9:30 *CHARACTERISTICS OF A LINEAR ARRAY OF a-Si:H THIN FILM POSITION SENSITIVE DETECTORS, E. Fortunato, F. Soares and R. Martins, DCM/FCT-UNL and CEMOP-UNINOVA, Quinta da Torre, 2825 Monte de Caparica, Portugal*
- E-IV.3 9:30- 9:50 *DESIGN ISSUES OF TWO-DIMENSIONAL AMORPHOUS SILICON POSITION-SENSITIVE DETECTORS, Jia-Yi Shung, Klaus Y.-J. Hsu, National Tsing Hua Univ., Dept. of Electrical Eng., Hsinchu, Taiwan, ROC; Yeu-Long Jiang, National Chung Hsin Univ., Dept. of Electrical Eng., Taichung, Taiwan, ROC; Cho-Jen Tsai, National Chung Hsin Univ., Inst. of Materials Eng., Taichung, Taiwan, ROC*
- E-IV.4 9:50-10:10 *STABILITY AND QUANTUM EFFICIENCY OF A NOVEL TYPE OF a-Si:H/a-SiC:H BASED UV DETECTOR, P. Mandracci, F. Giorgis, F. Giuliani, INFN and Dept. of Physics, Polytechnic of Turin, C.so Duca degli Abruzzi 24, 10129 Torino, Italy and M.L. Rastello, IEN Galileo Ferraris, C.so Massimo D'Azeglio 42, 10135 Torino, Italy*
- E-IV.5 10:10-10:30 *AI-BASED SPUTTER-DEPOSITED FILMS FOR LARGE LIQUID-CRYSTAL-DISPLAY SUBSTRATES, H. Takatsuji, T. Arai and S. Tsuji, Display Technology, IBM Japan, Ltd., Shimotsuruma, Yamato-shi, Kanagawa 242, Japan; K. Kuroda and H. Saka, Department of Quantum Engineering, Nagoya University, Nagoya 464-01, Japan*
- 10:30-10:50 **BREAK**
- E-IV.6 10:50-11:30 - Invited - *LOW TEMPERATURE SILICON DEPOSITION FOR LARGE AREA SENSORS AND SOLAR CELLS, M.B. Schubert, Univ. Stuttgart, Institut für Physikalische Elektronik, Pfaffenwaldring 47, 70569 Stuttgart, Germany*
- E-IV.7 11:30-11:50 *DEVICE-QUALITY POLYCRYSTALLINE SILICON FILMS DEVELOPED AT LOW PROCESS TEMPERATURES BY HOT WIRE CHEMICAL VAPOR DEPOSITION, S.C. Saha, J. Guillet, S. Hamma, J.E. Bourde, Laboratoire de Physique des Interfaces et des Couches Minces, CNRS UPR 0258, Ecole Polytechnique, 91128 Palaiseau Cedex, France*
- E-IV.8 11:50-12:10 *FEMTOSECOND DIAGNOSTICS OF Si(001)-BASED MOS STRUCTURES BY PHOTOINDUCED AND DC-ELECTRIC FIELD INDUCED SECOND HARMONIC GENERATION, M. Anderson, P. Wilson, and M.C. Downer, Physics Department, The University of Texas at Austin, Austin TX 78712, USA, M.L. Lyubimova, E.D. Mishina, and O.A. Aktsipetrov, Department of Physics, Moscow State University, Moscow 119899, Russia*
- E-IV.9 12:10-12:30 *Ge:SiO EVAPORATED ALLOYS AS THERMOSENSITIVE LAYER FOR LARGE AREA BOLOMETERS, E. Iborra, J. Sangrador, M. Clement, Dto. Tecnología Electrónica, Universidad Politécnica de Madrid, 28040 Madrid, Spain and J. Perriere, Groupe de Physique des Solides, Université de Paris VII, 2 place Jussieu, 75251 Paris, France*
- 12:30-14:00 **LUNCH**

SYMPOSIUM E

Thursday June 18, 1998**Jeudi 18 juin 1998****Afternoon****Après-Midi****SESSION V - Field Emission and EL Displays****Chairperson:** **G. Fortunato, DCM/FCT-UNL and CEMOP-UNINOVA, Monte de Caparica, Portugal**

- E-V.1** **14:00-14:40** - Invited - **LARGE AERA FIELD EMISSION DISPLAYS**, J. Jaskie, Motorola, Advanced Display Technologies, Phoenix Corporate research Laboratories, 2100 East Elliot Road, Tempe, Arizona 85284, USA
- E-V.2** **14:40-15:00** **ENHANCING THE FIELD EMISSION PROPERTIES OF AMORPHOUS CARBON FILMS BY THERMAL ANNEALING**, A.P. Burden, R.D. Forrest, and S.R.P. Silva, School of Electronic Engineering, Information Technology & Mathematics, University of Surrey, Guildford, GU2 5XH, UK
- E-V.3** **15:00-15:20** **INFLUENCE OF SURFACE MORPHOLOGY OF THE POLYCRYSTALLINE SILICON ON FIELD ELECTRON EMISSION**, A.A. Evtukh, Institute of Semiconductor Physics, 45 Propekt Nauki, Kiev 252650, Ukraine
- E-V.4** **15:20-15:40** **VISIBLE PHOTOLUMINESCENCE AND ELECTROLUMINESCENCE FROM Si NANOCRYSTALLINE THIN FILMS**, Wei Wu, X.F. Huang, K.J. Chen, Department of Physics, Nanjing University, Nanjing 210093, China; J.B. Xu, Department of Electronic Engineering, The Chinese University of Hong Kong, Hong Kong
- E-V.5** **15:40-16:20** - Invited - **FROM MATERIALS TO PRODUCTS: A SYSTEM PERSPECTIVE**, C. Reita, Thomson-CSF, Laboratoire Central de Recherche, Domaine de Corbeville, 91404 Orsay Cedex, France
- 16:20-17:00** **BREAK**

POSTER SESSION II**17:00-19:00** *See programme of this poster session p. E-11 to p. E-12.***END OF SYMPOSIUM E**

SYMPOSIUM E

SYMPOSIUM E
POSTER SESSIONS

Wednesday June 17, 1998
Mercredi 17 juin 1998

Afternoon
Après-midi

Poster Session I
17:00-19:00

- E-1/P1 DEPOSITION FILMS $a\text{-Si:H}$ IN COMBINED (LF+HF) DISCHARGE, D.I. Grunsky, M.N. Bosyakov, A.P. Dostanko, D.V. Juk, Belarussian State University of Informatics and Radioelectronics, P. Brovka Street, 220027 Minsk, Belarus
- E-1/P2 DEPOSITION OF NANOCRYSTALLINE SILICON ON ULTRA THIN ALUMINUM UNDERLAYERS BY PCVD AND SPUTTER-DEPOSITION AT 500K, T.P. Drüsedau, A. Diez and J. Bläsing, Otto-von-Guericke-Universität, Institut für Experimentelle Physik, PF 4120, 39016 Magdeburg, Germany
- E-1/P3 PREPARATION AND CHARACTERIZATION OF $a\text{-Si}_{1-x}\text{C}_x\text{H}$ FILMS DEPOSITED IN HELIUM REMOTE PLASMA FROM TRIMETHYLCHLOROSILANE, T.P. Smirnova, L.V. Yakovkina, B.M. Ayupov, I.P. Dolgovesova, V.A. Nadolnny, V.N. Kitchay, Institute of Inorganic Chemistry, Russian Academy of Sciences, Siberian Dpt., Lavrentjev Ave 3, Novosibirsk, Russia
- E-1/P4 CARRIER TRANSPORT, STRUCTURE AND ORIENTATION IN POLYCRYSTALLINE SILICON ON GLASS, K. Nakahata, A. Miida, T. Kamiya, C.M. Fortmann and I. Shimizu, Dept. of Innovative and Engineered Materials, The Graduate School, Tokyo Institute of Technology, 4259 Nagatsuta, Midori-ku, Yokohama 226-8502, Japan
- E-1/P5 SOLID PHASE CRYSTALLIZATION OF AMORPHOUS SiGe FILMS DEPOSITED BY LPCVD ON SiO_2 AND GLASS, J. Olivares, A. Rodriguez, J. Sangrador, T. Rodriguez, E.T.S.I.T-U.P.M., Madrid, Spain; C. Ballesteros, E.P.S.-U. Carlos III, Leganés, Madrid, Spain; A. Kling, C.F.N.U.L., Lisbon, Portugal
- E-1/P6 POLYCRYSTALLINE SILICON FILM GROWTH IN A $\text{SiF}_4/\text{SiH}_4/\text{H}_2$ PLASMA, B. Lee, L.J. Quinn, P.T. Baine, S.J.N. Mitchell, B.M. Armstrong and H.S. Gamble, Dept. of Electrical & Electronic Engineering, The Queen's University of Belfast, Belfast BT9 5AH, UK
- E-1/P7 PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION OF NANOCRYSTALLINE SILICON FILMS FROM $\text{SiF}_4\text{-H}_2\text{-He}$ AT LOW TEMPERATURE, G. Cicala, P. Capezuto and G. Bruno, Centro di Studio per la Chimica dei Plasmi, Dipartimento di Chimica, Università di Bari, Via Orabona 4, 70126 Bari, Italy
- E-1/P8 TRANSPORT CHARACTERIZATION OF HIGH MOBILITY LOW TEMPERATURE PECVD MICROCRYSTALLINE SILICON, R. Brenot, J.P. Kleider*, C. Longeaud*, T. Mohammed Brahim**, R. Vanderhaghen, Laboratoire de Physique des Interfaces et des Couches Minces, UMR 7647 du CNRS, Ecole Polytechnique, 91128 Palaiseau Cedex, France; *Laboratoire de Genie Electrique de Paris, Ecole Supérieure d'Electricité, 91192 Gif/Yvette Cedex, France, **Laboratoire de Microélectronique et Visualisation, Université Rennes 1, 35042 Rennes Cedex, France
- E-1/P9 STABILITY OF DIELECTRIC PROPERTIES OF PECVD DEPOSITED CARBON-DOPED SiOF FILMS, J. Lubguban, Jr., Y. Kurata, T. Inokuma, and S. Hasegawa, Faculty of Engineering, Kanazawa University, Kanazawa 920, Japan
- E-1/P10 HIGH RATE DEPOSITION OF ta-C:H USING AN ECWR PLASMA SOURCE, N.A. Morrison, S. Muhl, S. Rodil, J. Robertson, W.I. Milne, Engineering Dept, Cambridge University, Cambridge CB2 1PZ, UK and M. Weiler, CCR, Maarweg 5, 53619 Rheinbreitbach, Germany
- E-1/P11 MICROSTRUCTURES OF POLYCRYSTALLINE SILICON THIN FILMS PREPARED BY HOT WIRE CHEMICAL VAPOR DEPOSITION WITH HYDROGEN DILUTION, X. Guo, M. Zhu, Graduate School, Academia Sinica, P.O.Box 3908 Beijing, China; B. Dong, Institute of HEP, Academia Sinica, Beijing, China; H. Han, Institute of Semiconductors, Academia Sinica, Beijing 100084, China
- E-1/P12 THICKNESS CONTROL AND RECRYSTALLIZATION OF THE BUFFER LAYER OF NANOCRYSTALLINE, F. Gourbilleau, A. Achig, P. Voivenel and R. Rizk, LERMAT, unité CNRS 6004, 6 Bd Maréchal Juin, 14050 Caen cedex, France
- E-1/P13 HYDROGEN PARTIAL PRESSURE EFFECTS ON THE STRUCTURE AND PROPERTIES OF THE SPUTTERED SiLiOCN LAYERS, A. Achig, R. Rizk, F. Gourbilleau and P. Voivenel, LERMAT, unité CNRS 6004, ISMRA, 6 Bd Maréchal Juin, 14050 Caen cedex, France

SYMPOSIUM E

- E-I/P14 **STABILITY OF LPCVD AMORPHOUS SILICON**, A. Sliwinski and S.M. Pietruszko, Warsaw Univ. of Technology, IMiO PW, Koszykowa 75, 00-662 Warsaw, Poland; J. Jang, Dept. of Physics, Kyunghee University, Dongdaemoon-ku, 130-701 Seoul, Korea
- E-I/P15 **HYDROGENATED AMORPHOUS SILICON THIN FILMS PREPARATION, STRUCTURAL AND OPTICAL CHARACTERIZATION**, A. Chouiyakh, K. Mellasi and K. Benai, University Ibn Tofail, Faculty of Science, Department of Physics, B.P.133, 14000 Kenitra, Morocco
- E-I/P16 **OPTICAL PROPERTIES OF LPCVD SILICON OXYNITRIDE**, M. Modreanu, Institute of Microtechnology PO Box 38-160, Bucharest 72225, Romania; N. Tomozeiu, Faculty of Physics, University of Bucharest, PO Box 11 Mg, 5600 Bucharest, Romania; P. Cosmin, Cathalyst Semiconductor Inc., 1259 Borregas Avenue, Sunnyvale, CA 94089, USA and M. Gartner, Institute of Chemistry and Physics, Bucharest, Romania
- E-I/P17 **DEPOSITION OF MICROCRYSTALLINE SILICON FILMS BY MAGNETRON SPUTTERING**, M. Tzolov, Y. Jeliazova, M. Sendova-Vassileva, D. Dimova-Malinovska, M. Kamenova, CLSENE-S-BAS, 72 Tzigradsko Chaussee, 1784 Sofia, Bulgaria
- E-I/P18 **HIGH QUALITY, RELAXED $\text{Si}_{1-x}\text{Ge}_x$ EPITAXIAL LAYERS FOR SOLAR CELL APPLICATION**, K. Said, J. Poortmans, M. Caymax, R. Loo, Interuniversity Micro-Electronics Centre (IMEC), Kapeldreef 75, 3001 Leuven, Belgium; A. Daami, G. Bremond, INSA de Lyon (UMR 5511), 20 Av. A. Einstein, 69621 Villeurbanne Cedex, France, O. Kruger, M. Kuttler, Institute for Semiconductor Physics, Walter- Koring Str. 2, 15230 Frankfurt (Oder), Germany
- E-I/P19 **SHAPE OF GRAM SIZE DISTRIBUTIONS DURING THERMAL AND ION-INDUCED CRYSTAL GRAIN NUCLEATION IN a-Si**, C. Spinella, S. Lombardo, CNR-IMETEM, Stradale Primosole 50, 95121 Catania, Italy, and F. Priolo INFN - Dipartimento di Fisica dell'Universit  di Catania, corso Italia 57, 95129 Catania, Italy
- E-I/P20 **RAMAN ANALYSIS OF ANNEALING TIME INFLUENCE ON THE CRYSTALLIZATION OF LPCVD a-Si ON GLASS SUBSTRATES**, J.-L. Alay and J.R. Morante, Departament d'Electr nica, Universitat de Barcelona, Avgda. Diagonal 645-647, 08028 Barcelona, Spain; T. Mohammed-Brahim, M. Sarret and O. Bonnaud, Groupe de Microelectronique et Visualisation, Campus de Beaulieu 11B, Universit  de Rennes 1, 35042 Rennes Cedex, France
- E-I/P21 **IMPROVED CHARACTERIZATION OF POLYSILICON FILMS BY RESONANT RAMAN SCATTERING**, V. Paillard and P. Puech, Lab. de Physique des Solides, Univ. P. Sabatier, 118 Route de Narbonne, 31062 Toulouse, France; B. Caussat and J.P. Coudere, Institut de G nie Chimique, 18 Chemin de la Loge, 31078 Toulouse, France; P. Temple-Boyer, LAAS, 7 Av. Colonel Roche, 31077 Toulouse, France; B. de Mauduit, CEMES, BP 4347, 31055 Toulouse, France
- E-I/P22 **IN-SITU DIAGNOSTICS FOR PREPARATION OF LASER CRYSTALLIZED SILICON FILMS ON GLASS FOR SOLAR CELLS**, G. Andr , J. Bergmann, F. Falk, E. Dee, Institut f r Physikalische Hochtechnologie, Helmholtzweg 4, 07743 Jena, Germany
- E-I/P23 **OBSERVATION OF (110) ORIENTED SILICON NANOCRYSTALS IN a-Si FILMS ON GLASS SUBSTRATES AFTER PULSE EXCIMER LASER TREATMENTS**, M.D. Efremov, V.A. Volodin, S.A. Kochubei, Institute of Semiconductor Physics SB RAS, pr. Lavrentjeva 13, Novosibirsk 630090, Russia; V.V. Bolotov, Institute of Sensor Microelectronics SB RAS, pr. Mira 55a, Omsk 644077, Russia
- E-I/P24 **POLY-Si TFT WITH EXCELLENT ELECTRONIC PROPERTIES USING METAL INDUCED LATERAL CRYSTALLIZATION**, H.S. Kwok, Z.H. Jin, G. Bhat, M. Wong, Hong Kong, University of science and technology, Department of electrical and electronic engineering.
- E-I/P25 **REAL TIME SPECTROSCOPIC REFLECTOMETER FOR END POINT DETECTION ON MULTICHAMBER DEPOSITION PROCESSES**, P. Boher, S. Noygues and J.L. Stehle, SOPRA S.A., 26 rue Pierre Joigneaux, 92270 Bois-Colombes, France
- E-I/P26 **STATE CREATION INDUCED BY GATE BIAS STRESS IN UNHYDROGENATED POLYSILICON TFT'S**, B. Tala-Ighil, A. Rahal, K. Mourgues*, A. Toutah, L. Pichon, T. Mohammed-Brahim**, F. Raoult*, O. Bonnaud*; Site Universitaire, LUSAC, BP78, 50130 Octeville, France; *GMV, UPRESA au CNRS 6076, Universit  Rennes I, Campus de Beaulieu, 35042 Rennes Cedex, France
- E-I/P27 **NEW METHOD FOR DETERMINING THE EFFECTIVE CHANNEL LENGTH IN POLYSILICON THIN FILM TRANSISTORS**, E.V. Farmakis, J. Brini, G. Kamarinos, N. Mathieu, LPCS, ENSERG, 23 rue des Martyrs, BP 257, 38016 Grenoble Cedex I, France and C.A. Dimitriadis, Department of physics, University of Thessaloniki, 54006 Thessaloniki, Greece
- E-I/P28 **TRANSPORT PROPERTIES OF mc-Si:H ANALYZED BY MEANS OF NUMERICAL SIMULATION**, A. Fantoni, M. Vieira, R. Martins, Uninova, Quinta da Torre, 2825 Monte de Caparica, Portugal
- E-I/P29 **NITROGEN ADDED AI RARE-EARTH ALLOY FOR THIN FILM TRANSISTORS**, Toshiaki Arai, Hiroshi Takatsuji, and Hideo Iiyori, IBM Yamato Laboratory, 1623-14 Shimo-tsuruma, Yamato-shi, Kanagawa 242, Japan

SYMPOSIUM E

- E-1/P30 *POLYPYRROLE-BASED CONDUCTING HOT MELT ADHESIVES FOR EMI SHIELDING APPLICATIONS, J.A. Pomposo and F.J. Rodriguez, CIDETEC, Center for the Electrochemical Research & Development, P^o Mikeletegi 61, 1^o, 20.009 San Sebastian, Spain*
- E-1/P31 *SURFACE PASSIVATION OF Si BY RF MAGNETRON SPUTTERED SiN, M. Vetter, Institut für Physikalische Elektronik, Universität Stuttgart, Allmandring 19, 70569 Stuttgart, Germany*
- E-1/P32 *EFFECT OF ELECTRIC FIELD POLARITY CHANGE ON DEFECT CREATION IN MOS CAPACITORS, Dj. Ziane, A. El-Hdiy and G. Saluce, LASSI / DTI (CNRS EP 120), Université de Reims, BP 1039, 51687 Reims cedex, France*

SYMPOSIUM E

Thursday June 18, 1998

Jeudi 18 juin 1998

Afternoon

Après-Midi

Poster Session II

17:00-19:00

- E-II/P1 **ROLE OF THE RESISTIVE LAYER ON THE PERFORMANCES OF a-Si:H THIN FILM POSITION SENSITIVE DETECTORS**, E. Fortunato, F. Soares and R. Martins, DCM/FCT-UNL and CEMOP-UNINOVA, Quinta da Torre, 2825 Monte de Caparica, Portugal
- E-II/P2 **GASEOUS POLLUTION DETECTION BY Pt DOPED SnO₂ THIN FILMS ON SILICON**, A.V. Tadeev, G. Delabouglise and M. Labeau, Laboratoire des Matériaux et du Génie Physique, Institut National Polytechnique de Grenoble, UMR 5628, BP 46, 38402 Saint Martin d'Hères, France
- E-II/P3 **FREQUENCY LIMITS OF MICROCRYSTALLINE P-I-N DETECTORS**, M. Vieira, F. Macarico, M. Fernandes, S. Koynov* and R. Schwarz**, ISEL, R. Conselheiro Emílio Navarro, 1900 Lisboa, Portugal; *CL-SENES, Bulgarian Academy of Sciences, 1784 Sofia, Bulgaria; **Phy. Dep., IST, Av. Rovisco Pais, 1000 Lisboa, Portugal
- E-II/P4 **LASER-RECRYSTALLIZED POLYSILICON RESISTORS AND PIEZORESISTORS FOR MECHANICAL SENSORS**, A.A. Diuzhinin, E.N. Lavitska, I.I. Maryamova and Y.M. Khoverko, «Lviv Polytechnica» State University, Kottlarevsky Street 1, Lviv 290013, Ukraine
- E-II/P5 **THERMAL STABILITY OF MODIFICATED SURFACES OF SILICON - BASED THIN DIELECTRIC FILMS FOR LARGE AREA ELECTRONICS**, V.S. Yashenko, I.K. Doycho, Odessa State University, Physical Faculty, Non-Crystalline Electronic Systems Dept. (NIL-II), Odessa, Ukraine
- E-II/P6 **SELF-ASSEMBLY OF SURFACE COMPOSITE TiO₂/POLYMER ULTRATHIN FILMS**, N. Kovtyukhova, Institute of Surface Chemistry, 31, Pr. Nauky, 252022 Kiev, Ukraine; P.J. Ollivier, The Pennsylvania State University, University Park, PA 16802, USA; S. Chizhik, A. Dubravin, Metal-Polymer Research Institute, 32A Kirov Str., 246652 Gomel, Belarus; E. Buzaneva, A. Gorchinskiy, National T. Shevchenko University, 64 Vladimirska Str., 252033 Kiev, Ukraine; A. Marchenko, Institute of Physics, 48 Pr. Nauky, 252022 Kiev, Ukraine
- E-II/P7 **HIGH QUALITY SPRAY DEPOSITED FLUORINE-DOPED TIN OXIDE FILMS FOR LARGE AREA ELECTRONICS**, A. Malik, R. Nunes, E. Fortunato and R. Martins, FCT-UNL/CEMOP-UNINOVA, 2825 Monte de Caparica, Portugal
- E-II/P8 **PERFORMANCES PRESENTED BY LARGE AREA ITO LAYERS PRODUCED BY RF MAGNETRON SPUTTERING**, I. Baia, M. Quintela, L. Mendes and R. Martins, CEMOP-UNINOVA, Quinta da Torre, 2825 Monte de Caparica, Portugal
- E-II/P9 **PERFORMANCES PRESENTED BY ZINC OXIDE THIN FILMS DEPOSITED BY SPRAY PYROLYSIS**, P. Nunes, A. Malik, B. Fernandes, E. Fortunato and R. Martins, Materials Science Department of Faculty of Science and Technology of New University of Lisbon, 2825 Monte da Caparica, Portugal
- E-II/P10 **POLARIZATION PHOTSENSITIVITY OF ITO/Si SOLAR CELLS**, V.Yu. Rud', State Technical University, 29 Polytekhnicheskaya st., 195251 St. Petersburg, Russia; Yu. V. Rud', A.F. Ioffe Physico-Technical Institute, Russian Academy of Sciences, 26 Polytekhnicheskaya st., 194021 St. Petersburg, Russia and V.M. Botnaryuk, State University, Kishinev, Moldova
- E-II/P11 **RAMAN SCATTERING IN HIGHLY CONDUCTIVE AND TRANSPARENT IN THE VISIBLE RANGE ZnO FILMS**, N. Tzenov, M. Tzolov, D. Dimova-Malinovska, M. Kalitzova, T. Telbizova, CLSENES-BAS, 72 Tzigradsko Chaussee, 1784 Sofia, Bulgaria; C. Pizzuto, G. Vitali, University 'La Sapienza', Via A. Scarpa 14, 00161 Rome, Italy; I. Ivanov, Linköping University, IFM / FYSIKHUSET, 581 83 Linköping, Sweden
- E-II/P12 **TiN THIN FILMS DEPOSITION BY RF REACTIVE SPUTTERING: APPLICATION TO OPTOELECTRONIC DEVICES**, M. Balucani, V. Bondarenko, L. Franchina, G. Lamedica and A. Ferrari, INFN Unit E6, University 'La Sapienza', Rome, Italy; and G. Dinescu, B. Mitu, C. Stanciu, V. Sandu*, M. Dinescu, IFA, NILPRD, PO Box MG-16, 76 900 Bucharest, Romania *NIMP, PO Box MG-26, 76 900 Bucharest, Romania
- E-II/P13 **SYNTHESIS OF OXIDE-BASED CONDUCTIVE LUMINESCENT THIN FILMS FOR FIELD-EMISSION DISPLAYS**, V. Bondar, M. Vasylyv, M. Grytsiv, Y. Dubov, S. Popovich, L. Akselrout, V. Davydov, V. Vasylytsiv, Lviv State University, Department of Physics, 50 Dragomanov Str., 290005 Lviv, Ukraine
- E-II/P14 **LASER PULSE CRYSTALLIZATION AND ANNEALING OF THIN FILMS PHOSPHOR MATERIALS**, B. Kotlyarchuk, D. Popovych, V. Savchuk, Pidstryhach Institute for Applied Problems of Mechanics and Mathematics National Academy of Sciences of Ukraine, 3 b Naukova Street, 290601 Lviv, Ukraine

SYMPOSIUM E

- E-II/P15 **XPS CHARACTERIZATION OF TUNGSTEN BASED CONTACT LAYERS ON 4H-SiC**, *A. Kakanakova-Georgieva, Ts. Marinova*, Institute of General and Inorganic Chemistry, 1113 Sofia, Bulgaria, *L. Kassamakova, R. Kakanakov*, Institute of Applied Physics, 4000 Plovdiv, Bulgaria, *O. Noblanc, C. Arnodo, S. Cassette, C. Brylinski*, Thomson-CSF/LCR, 91404 Orsay Cedex, France
- E-II/P16 **ACTIVE MATRIX DISPLAY WITH PILLARED NANOSTRUCTURES OF Al AND Ta ANODIC OXIDES**, *E.A. Outkina, A.I. Vorobyova*, Belorussian State University of Informatics and Radioelectronics, P.Brovky str.6, 220027 Minsk, Belarus
- E-II/P17 **DEEP SUBMICRON 3D SURFACE METROLOGY USING UV/BLUE SCANNING INTERFEROMETRY**, *P.C. Montgomery*, Laboratoire PHASE, CNRS, 23 rue du Loess, 67037 Strasbourg, France; *D. Montaner*, LEPSI, 23 rue du Loess, 67037 Strasbourg, France; *C. Kazmierski and S. Bouchoule*, France Telecom, CNET Paris B, Laboratoire de Bagneux, 92220 Bagneux, France
- E-II/P18 **NEW VANADIUM DOPANT PRECURSOR (VCl₃) FOR GaAs GROWN BY METALORGANIC VAPOUR PHASE EPITAXY**, *A. Rebey, A.B. Belgacem El Jani*, LPM-Faculté des Sciences, 5000 Monastir, Tunisie; *C. Ben Jeddou*, Faculté des Sciences Bizerte, Tunisie; *P. Gibart*, CHREA-CNRS, 06560 Valbonne, France
- E-II/P19 **AN ADVANCED MOCVD PROCESS BASED ON A COMBINED SYNTHESIS/TRANSPORT OF METAL CHELATES**, *O.V. Polyakov, A.M. Badalian, Y.L. Belyi*, Institute of Inorganic Chemistry, Siberian Branch, Russian Academy of Sciences, 3 Lavrentiev Ave., Novosibirsk, 630090, Russia
- E-II/P20 **NEW ORGANIC FILM PHOTOSEMICONDUCTOR SYSTEMS FOR ELECTRONIC TECHNIQS**, *L. Kostenko, D. Mysyk, A. Popov, Y. Skrypnik*, Institute of Physical Organic & Coal Chemistry of National Academy of Sciences of Ukraine, 70 R.Luxemburg str., Donetsk 340114, Ukraine
- E-II/P21 **PECULIARITIES OF PHOTOINDUCED OPTICAL ANISOTROPY IN POLYMER FILMS**, *V.N. Ermakov, A.S. Trofimov*, Bogolyubov Institute for Theoretical Physics, NASU, 252143 Kiev, Ukraine, *L.I. Shansky, A.G. Tereshchenko*, Institute of Physics, NASU, 252650 Kiev, Ukraine
- E-II/P22 **FIELD-ASSISTED FEMTOSECOND PUMP-PROBE MEASUREMENTS IN CONJUGATED SYSTEMS**, *C. Zenz, G. Lanzani*, University of Sassari, Via Vienna 2, 07100 Sassari, Italy; *G. Cerullo, S. De Silvestri*, Politecnico di Milano, P.za Leonardo da Vinci 32, 20133 Milan, Italy; *W. Graupner, F. Meghdadi, G. Leising*, Inst. f. Festkoerperphysik, Petersgasse 16, 8010 Graz, Austria
- E-II/P23 **SOL-GEL PROCESSING OF PT AND PZT FERROELECTRIC THIN FILMS**, *R.K. Hovsepyan, A.R. Pogosyan, E.S. Vartanyan*, Institute for Physical Research Armenian National Academy of Sciences, Ashtarak-2, 378410, Armenia and *A.L. Manukyan, S.G. Grigoryan, R.S. Vardanyan*, Armenian Scientific Research Institute of Applied Chemistry - ARIAC, Yerevan, Armenia
- E-II/P24 **PHENOMENA OF THE PHOTOPOLARIZATION ON BARRIER ORGANIC STRUCTURES**, *B. Roman*, Non-Linear Sensors Laboratory, Drohobych State Pedagogical Institute, I. Franko str. 24,293720, Drohobych, Lviv Region, Ukraine
- E-II/P25 **INSULATING LAYERS OF POLYCRYSTALLINE GaAs COMPOUNDS GROWN BY REACTIVE PLASMA SPUTTERING**, *O. Pesty, P. Canet, F. Lalande, J.L. Seguin, H. Cacharno*, Laboratoire EPCM, Case A62, Faculté des Sciences de Saint Jérôme, 13397 Marseille Cedex 20, France
- E-II/P26 **EPITAXIAL LAYERS Zn_{1-x}Cd_xHg_{1-y}Te (0<x<0.18, 0<y<0.12) AND HETEROINTERFACES ZnCdHgTe-Hg_{1-x}Cd_xTe (0<x<0.80): OPTICAL & ELECTRICAL CHARACTERISTICS**, *G. Khlvap, M. Andrukhiv*, Pedagogical Institute, 24 Franko str., Drohobych 2937207, Ukraine
- E-II/P27 **DEPENDENCE OF SEEBECK COEFFICIENT ON THICKNESS OF PYRITE THIN FILMS**, *J.R. Ares, I.J. Ferrer, J.F. Fernandez*, and *C. Sanchez*, Dpto. Física de Materiales, Facultad de Ciencias, Universidad Autonoma de Madrid, Cantoblanco, 28024 Madrid, Spain
- E-II/P28 **DETERMINATION OF THE CRYSTALLOGRAPHIC ORIENTATION IN PbTiO₃ EPITAXIAL FILMS USING OPTICAL SECOND HARMONIC GENERATION**, *E.D. Mishina, N.E. Sherstyuk, E.Ph. Pevtsov, A.S. Sigov, and O.A. Aktsipetrov*, Moscow Institute of Radioengineering, Electronics and Automation, Moscow 117454, Russia, *A.M. Grishin*, Royal Institute of Technology, Stockholm, Sweden

E-MRS'98 SPRING MEETING



SYMPOSIUM F

Techniques and Challenges for 300 mm Silicon: Processing, Characterization, Modelling and Equipment

Symposium Organizers

- | | |
|-------------------|----------------------------------------------------------------|
| H. RICHTER | Institute for Semiconductor Physics, Frankfurt (Oder), Germany |
| P. WAGNER | Wacker Siltronic AG, Burghausen, Germany |
| G. RITTER | SEMITOOL Inc, Kalispell, USA |

The assistance provided by
WACKER SILTRONIC AG
SEMITOOL Inc
SEZ AG
is acknowledged with gratitude.

(Germany)
(USA)
(Austria)

SYMPOSIUM F

Tuesday June 16, 1998
Mardi 16 juin 1998

Morning
Matin

SESSION I - 300 mm Fabs

- F-I.1 09:30-10:00 - *Invited* - 300 MM CONVERSION - CHALLENGE AND BREAKTHROUGH FOR FUTURE SEMICONDUCTOR MANUFACTURING, P. Kücher, D. Tull, K. Roithner, M. Hiatt, Semiconductor 3000 GmbH Co. KG, Germany
- F-I.2 10:00-10:30 AUTOMATISATION AND FAB CONCEPTS FOR 300 MM WAFER MANUFACTURING, A. Honold, Jenoptik, INFAB, Jena, Germany and H. Binder, Meissner + Wurst, Stuttgart, Germany

10:30-11:00 BREAK

SESSION II - 300 mm Rapid Thermal Processing *Joint with Symposium I*

- F-II.1 11:00-11:30 - *Invited* - MODELLING AND OFF-LINE OPTIMIZATION OF A 300 MM RAPID THERMAL PROCESSING SYSTEM, A. Tillmann, STEAG AST Elektronik GmbH, Dornstadt, Germany

11:30-14:00 LUNCH

SYMPOSIUM F

Tuesday June 16, 1998
Mardi 16 juin 1998

Afternoon
Après-midi

SESSION III - Crystal Growth and Epitaxy

- F-III.1 14:00-14:30 - Invited - *LARGE DIAMETER SILICON TECHNOLOGY AND EPITAXY, H. Yamagishi, M. Kuramoto, Y. Shiraishi, M. Machida, K. Takano, N. Takase, T. Iida, J. Matubara, H. Minami, M. Imai and K. Takada, Super Silicon Crystal Research Institute Corp., 55-1 Nakanoya, Annaka, Gunma 379-0125, Japan*
- F-III.2 14:30-15:00 *TECHNOLOGY AND EQUIPMENT FOR THE GROWTH OF SILICON CRYSTALS WITH DIAMETERS OF 300 MM AND MORE, B. Altekruiger, Leybolds Systems GmbH, Germany*
- F-III.3 15:00-15:30 - Invited - *CHALLENGES FOR ECONOMICAL GROWTH OF HIGH QUALITY 300 NM Cz Si CRYSTALS, E. Tomzig, W. van Ammon, E. Dornberger, U. Lanter, W. Zulehner, Wacker Siltronic AG, 84479 Burghausen, Postfach 1140, Germany*
- F-III.4 15:30-16:00 *300 MM EPITAXY CHALLENGES AND OPPORTUNITIES FROM A WAFER MANUFACTURER'S POINT OF VIEW, P.O. Hansson, M. Fuerfanger, Wacker Siltronic AG, PO Box 1140, 84479 Burghausen, Germany and Y. Makarov, Friedrich-Alexander-Universität, Cauerstrasse 4, 91038 Erlangen, Germany*

16:00-16:30 BREAK

SESSION IV - Bulk Material Properties

- F-IV.1 16:30-17:00 - Invited - *STUDY OF OXYGEN TRANSPORT IN CZOCHRALSKI GROWTH OF SILICON, G. Müller, A. Mühe, Y. Makarov, Universität Erlangen, Institut für Werkstoffwissenschaften, Erlangen, Germany; E. Dornberger, E. Tomzig, W. v. Ammon, Wacker Siltronic AG, Burghausen, Germany*
- F-IV.2 17:00-17:30 *VACANCY DISTRIBUTION MEASUREMENTS IN Cz Si CRYSTALS GROWN BY DIFFERENT PULLING RATE, Y. Takano and K. Kakumoto, Department of Materials and Technology, Science University of Tokyo, 2641 Yamazaki, Noda-shi, Chiba, 278-0114, Japan*
- F-IV.3 17:30-18:00 *UNIFORM PRECIPITATION OF OXYGEN IN LARGE DIAMETER WAFERS, G. Kissinger, J. Vanhellemont*, U. Lambert*, D. Gräf, and H. Richter, Institute for semiconductor, Physics, Walter-Korsing-Str. 2, 15230 Frankfurt (Oder), Germany; *Wacker Siltronic AG, P.O. Box 1140, 84479 Burghausen, Germany*
- F-IV.4 18:00-18:30 *EFFECT OF THE STRUCTURAL STATE OF THE MELT ON THE PROPERTIES OF SILICON CRYSTALS, A. Ya. Gubenko, Moscow Institute of Electronics and Mathematics, ul. Kuusina 25, Moscow, 125252, Russia*

SYMPOSIUM F

Wednesday June 17, 1998
Mercredi 17 juin 1998

Afternoon
Après-midi

SESSION V- 300 mm Challenges and Opportunities

F-V.1	14:00-14:30	NN
F-V.2	14:30-15:00	- Invited - 300 MM WAFERS - A TECHNICAL AND AN ECONOMICAL CHALLENGE, H. Dietrich, W. Bergholz, S. Dubbert and C. Drabe, Siemens AG, München, Germany
	15:00-15:30	BREAK

SESSION VI - Panel Discussion

15:30-17:00	THE 300 MM TECHNOLOGY - GLOBAL OPPORTUNITY FOR INDUSTRY AND CHALLENGES FOR RESEARCH <i>The silicon materials roadmap</i> <i>Technology driven demand</i> <i>Coordination and partnerships among Silicon wafer, IC equipment suppliers and IC manufacturers</i> <i>Silicon wafer requirements</i> <i>Metrology, international standards</i> Tentatives Participants: <i>Siemens AG, Jenoptik AG, Waker Siltronic, SSi, Semitool, FhG, Semiconductor 300, BMBF, IHP</i>
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SYMPOSIUM F

Thursday June 18, 1998
Jedi 18 juin 1998

Morning
Matin

SESSION VII - 300 mm Wafer Surfaces

- F-VII.1 8:30-9:00 *DISCRIMINATION OF PARTICLES AND DEFECTS ON SILICON WAFERS, F. Passek, H. Piontek, A. Luger and P. Wagner, Wacker Siltronic AG, P.O. Box 1140, 88479 Burghausen, Germany*
- F-VII.2 9:00-9:30 *ALKALINE CLEANING OF SILICON WAFERS: ADDITIVES FOR THE PREVENTION OF METAL CONTAMINATION, A. Martin, B.O. Kolbesen, J.W. Goethe-University, Frankfurt/Main, Germany; W. Hub, Siemens AG, Semiconductor Group, Muenchen, Germany; P. Mertens, M. Baeyers, H. Schmidt, IMEC, Leuven, Belgium*
- F-VII.3 9:39-10:00 *CONTAMINATION SURFACE ANALYSIS OF THE LARGE SIZE Si WAFERS BY TXRF METHOD USING OF WIDE DIVERGENT PRIMARY X-RAY BEAM, V.K. Egorov, A.P. Zuev, Lab. Nucl. Phys. IPMT RAS, Institute prospect 19, 142432, Chernogolovka, Moscow dist., Russia*

10:00-10:30 BREAK

SESSION VIII - High Temperature Processes

- F-VIII.1 10:30-11:00 - Invited - *MECHANICAL STRENGTH OF 300 MM DIAMETER Si WAFERS AT HIGH TEMPERATURES: MODELING AND SIMULATIONS, A. Fischer, H. Richter, Institute for Semiconductor Physics, Walter-Korsing-Str. 2, 15230 Frankfurt (Oder), Germany; R. Knott, P. Krottenthaler, R. Wahlich, Wacker Siltronic AG, POB 1140, 84479 Burghausen, Germany*
- F-VIII.2 11:00-11:30 *EXPERIMENTAL VERIFICATION OF DIFFERENT SLIP GENERATION MODELS FOR 300 MM WAFERS PROCESSED IN A FAST RAMP VERTICAL FURNACE, G. Ritter, P. McHugh, G. Wilson, L. Funk, and P. Zaumseil*, Semitool, Inc., 655 West Res. Drive, Kalispell, MT 59901, USA, *Institute for Semiconductor Physics, W. Korsing Str. 2, Frankfurt (Oder), Germany*
- F-VIII.3 11:30-12:00 *CHALLENGES AND CURRENT STATUS IN 300 MM RTP PROCESSING, M. Glück, U. Kreiser, M. Merkwitz, S. Frigge, P. Schmid, and W. Lerch*
- F-VIII.4 12:00-12:30 *SOLID PLANAR SOURCES OF BORON AND PHOSPHORUS FOR HIGHLY UNIFORM DOPING OF LARGE DIAMETER SILICON PLATES, V.O. Voronin, Y.M. Bogdanovski, L.Z. Hasko, V.M. Myshchyslin, Electrophysical Dpt., State University «Lviv Polytechnic», 12 St.Bandera Street, 290646 Lviv, Ukraine*

12:30-14:00 LUNCH

SYMPOSIUM F

Thursday June 18, 1998
Jeudi 18 juin 1998

Afternoon
Après-Midi

SESSION IX - Characterization and Metrology

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|--------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| F-IX.1 | 14:00-14:30 | NOVEL PROCESS CONTROL STRATEGIES FOR 300 MM SEMICONDUCTOR PRODUCTION, L. Pfitzner, C. Schneider, Fraunhofer Institut für Integrierte Schaltungen, Erlangen, Germany |
| F-IX.2 | 14:30-15:00 | SPECULAR AND DIFFUSE X-RAY SCATTERING FROM SILICON SURFACES: A USEFUL TOOL FOR QUALITY CONTROL, R. Stömmel, H. Göbel, Siemens AG, Corporate Technology, Otto-Hahn-Ring 6, 81739 Munich, Germany and U. Pietsch, University of Potsdam, Institute of Physics, Am Neuen Palais 10, 14469 Potsdam, Germany |
| F-IX.3 | 15:00-15:30 | NOVEL METHOD, FOR 300 MM SILICON WAFER CHARACTERIZATION IN VLSI TECHNOLOGY, V.M. Popov, V.A. Denysyuk, A.V. Klimenko, Research Inst for Microdevices Phys & Techn Res Cert Center, 3, Severo-Syretskaya, 254136 Kiev, Ukraine |
| | 15:30-16:00 | BREAK |
| F-IX.4 | 16:00-16:30 | SOPRA SE300: A NEW TOOL FOR HIGH CHARACTERIZATION OF MULTILAYER STRUCTURES, P. Boher, M. Bucchia, J.P. Rey and J.L. Stehle, SOPRA S.A., 26 rue Pierre Joigneaux, 92270 Bois-Colombes, France |
| F-IX.5 | 16:30-17:00 | ACCURATE INFRARED ABSORPTION MEASUREMENT OF THE INTERSTITIAL OXYGEN CONCENTRATION IN P+ SILICON WAFERS, O. De Gryse, P. Clauws, University of Gent, Krijgslaan 281, 9000 Gent, Belgium; L. Rossou, J. Van Landuyt, RUCA-EMAT, Groenenborgerlaan 171, 2020 Antwerpen, Belgium, and J. Vanhellemont, Wacker Siltronic AG, P.O. Box 1140, 84479 Burghausen, Germany |
| F-IX.6 | 17:00-17:30 | FEMTOSECOND DIAGNOSTICS OF Si(001)-BASED MOS STRUCTURES BY PHOTOINDUCED AND DC-ELECTRIC FIELD INDUCED SECOND HARMONIC GENERATION, M. Anderson, P. Wilson, and M.C. Downer, Physics Department, The University of Texas at Austin, Austin TX 78712, USA; M.L. Lyubimova, E.D. Mishina, and O.A. Aktsipetrov, Department of Physics, Moscow State University, Moscow 119899, Russia |

END OF SYMPOSIUM F

E-MRS'98 SPRING MEETING



SYMPOSIUM G

Surface Processing: Laser, Lamp, Plasma

Symposium Organizers

- | | |
|--------------------|-------------------------------------------------------------------------------------|
| J. PERRIERE | Groupe de Physique des Solides, Universités Paris VII et Paris VI,
Paris, France |
| M. STUKE | Max-Planck-Institut für Biophysikalische Chemie, Göttingen,
Germany |
| I.W. BOYD | Electronic & Electrical Engineering, University college London,
London, UK |
| U. BIERMANN | Philips Reserach Laboratories, Eindhoven, The Netherlands |

SYMPOSIUM G

Tuesday June 16, 1998
Mardi 16 juin 1998

Morning
Matin

SESSION I -

Chairperson: E. Fogarassy, CNRS, Laboratoire PHASE, Strasbourg, France

- G-I.1 8:30-9:00 - Invited - UV LASER INDUCED PLASMA AND RELATED APPLICATIONS, C. Boulmer-Leborgne, J. Hermann, A.L. Thomann, E. Sicard and C. Vivien, GREMI, Université d'Orléans, BP 6759, 45067 Orléans cedex 2, France
- G-I.2 9:00-9:15 SIZE, ANISOTROPY AND DISTRIBUTION OF Cu NANOCRYSTALS PREPARED BY PULSED LASER DEPOSITION, R. Serna, C.N. Afonso, Instituto de Optica, C.S.I.C., 28006 Madrid, Spain; A. Naudon, D. Babonneau, LMP, UA4R 6630 du CNRS, UFR Sciences, bat SP2MI, Bd 3 Téléport 2, France; A.K. Petford-Long, Department of Materials, Univ. of Oxford, Oxford OX1 3PH, UK
- G-I.3 9:15-9:30 WORK FUNCTION VARIATION DURING UV LASER-INDUCED OXIDE REMOVAL, Cs. Beleznai*, D. Vouagner and J.P. Girardeau- Montaut, Laboratoire de Sciences et Ingénierie des Surfaces (EA 1877), Université Claude Bernard - Lyon 1, 43 Bd du 11 Novembre 1918, 69622 Villeurbanne Cedex, France; *also at the Department of Experimental Physics, Jozsef Attila University, 6720 Szeged, Dom t. 9., Hungary
- G-I.4 9:30-9:45 PULSED LASER DEPOSITION OF $\text{Li}_x\text{Mn}_y\text{O}_z$ AND LiCoO_2 THIN FILMS, M. Morcrette, A. Laurent, P. Barboux*, J.A. Chaos, Groupe de Physique des Solides, Universités Paris VII et Paris VI, Tour 23, 2 Place Jussieu, 75251 Paris Cedex 05, France; * Physique de la Matière Condensée, Ecole Polytechnique, 91128 Palaiseau Cedex, France
- G-I.5 9:45-10:00 SPATIO-ENERGETICAL CHARACTERISTICS OF LASER PLASMA IN CROSS-BEAM PLD. A. Tselev, A. Gorbunov, W. Pompe, Institut für Werkstoffwissenschaft, TU Dresden, 01062 Dresden, Germany

10:00-10:30 BREAK

SESSION II -

Chairperson: M.C. Castex, Laboratoire de Physique des Lasers, Villetaneuse, France

- G-II.1 10:30-11:00 - Invited - IN-SITU MONITORING DURING PULSED LASER DEPOSITION, D.H.A. Blank, Low Temperature Division, Applied Physics, University of Twente, P.O.Box 217, 7500 AE Enschede, The Netherlands
- G-II.2 11:00-11:15 LASER-INDUCED CRYSTALLIZATION OF AMORPHOUS SILICON-CARBON ALLOYS STUDIED BY ELECTRON MICROSCOPY AND RAMAN MICROSCOPY, C. Palma, M.C. Rossi*, C. Sapia*, E. Bemporad**, Departments of Physics, Electronic Engineering* and Industrial Mechanics**, University of Roma Tre, Via Vasca Navale 84, 00146 Roma, Italy
- G-II.3 11:15-11:30 PHOTODEFINED ETCHING OF n^+ LAYERS DIFFUSED ON P-TYPE SILICON SUBSTRATES, R.S. Videira, R.M. Gamboa, J.M. Alves, J.M. Serra, A.M. Vallêra; Dep. Física, Univ. de Lisboa, Campo Grande, 1700 Lisboa, Portugal
- G-II.4 11:30-11:45 PULSED KrF LASER ANNEALING OF RF SPUTTERED ZnS:Mn THIN FILMS, E. Mastio, W.M. Cranton, C.B. Thomas, The Nottingham Trent University, Department of Electrical and Electronic Engineering, Burton Street, Nottingham NG1 4BU, UK and E. Fogarassy, S. de Unamuno, CNRS, Laboratoire PHASE (UPR du CNRS no. 292), BP 20, 67037 Strasbourg Cedex 2, France
- G-II.5 11:45-12:00 THICKNESS DEPENDENT PROPERTIES OF LaCaMnO THIN FILMS, R. Praus, B. Leibold, G.M. Gross and H.-U. Habermeyer, Max-Planck-Institut für Festkörperforschung, Heisenbergstr. 1, 70569, Stuttgart, Germany
- 12:00-14:00 LUNCH

SYMPOSIUM G

Tuesday June 16, 1998

Mardi 16 juin 1998

Afternoon

Après-midi

SESSION III

Chairperson: R. Kelly, *Dipart. di Fisica, Università di Trento, Povo (TN), Italy*

- G-III.1 14:00-14:30 *NONTHERMAL EFFECTS DURING ArF LASER BEAM INTERACTION WITH BULK SILICON. FROM Si DESORPTION TO ABLATION, W. Marine, B. Kozlov, L. Patrone and M. Sentis, Groupement Interdisciplinaire Ablation Laser et Applications, UMR CNRS 6631 et UMR CNRS 6594, Faculté des Sciences de Luminy, Case 901, Marseille, France*
- G-III.2 14:30-14:45 *FORMATION OF Ag NANOPARTICLES IN PULSED LASER DEPOSITED Ag-Ge ALLOYS, Z. Paszti, G. Peto, Z.E. Horvath, A. Karacs, MTA Research Institute for Technical Physics and Materials Science, 1525 Budapest, P.O.Box 49, Hungary and L. Guzzi, Department of Surface Chemistry and Catalysis, Institute of Isotopes, 1525 Budapest, P.O.Box 77, Hungary*
- G-III.3 14:45-15:00 *ON THE ORIGIN OF THE DIFFERENT VELOCITY PEAKS OF PARTICLES SPUTTERED FROM SURFACES BY LASER PULSES OR CHARGED BEAMS, A. Miotello and R. Kelly, Dipart. di Fisica, Università di Trento, Povo (TN), Italy*
- G-III.4 15:00-15:15 *EXPANSION DYNAMICS OF Bi ATOMS PRODUCED BY LASER ABLATION OF SINGLE AND MULTI-COMPONENT TARGETS, J. Gonzalo, J.M. Ballesteros and C.N. Afonso, Instituto de Optica (CSIC), Serrano 121, 28006 Madrid, Spain*
- G-III.5 15:15-15:30 *CONDENSATION OF VAPOR AND NANOCLUSTERS FORMATION WITHIN THE VAPOR PLUME, PRODUCED BY NS-LASER ABLATION OF Si, B. Lukyanchuk, W. Marine, S. Anisimov*

15:30-16:00 BREAK

SESSION IV

Chairperson: J. Perrière, *Groupe de Physique des Solides, Universités Paris VII et VI, France*

- G-IV.1 16:00-16:30 *LASER PROCESSING OF WIDE BAND GAP MATERIALS: ADVANCES IN DEPOSITION, ETCHING AND INTEGRATION OF NOVEL DEVICES, R.D. Vispute, V. Talyansky, S. Choopun, R. Enck, A. Balsamo, R.P. Sharma, and T. Venkatesan, CSR, Department of Physics, University of Maryland, College Park, MD, USA; A.A. Iliadis, Department of Electrical Engineering, University of Maryland, College Park MD, USA; K.A. Jones Army Research Laboratory, Adelphi, MD, USA*
- G-IV.2 16:30-16:45 *GROWTH MECHANISMS AND STRUCTURAL PROPERTIES OF PECVD SiO₂ FILMS DEPOSITED FROM O₂/TEOS PLASMAS IN A HELICON REACTOR, C. Vallée, A. Granier, A. Goullet, K. Aumaille, G. Turban, Laboratoire des Plasmas et des Couches Minces, IMN- CNRS-Université de Nantes, 2 rue de la Houssinière, BP 32229, 44322 Nantes cedex 3, France*
- G-IV.3 16:45-17:00 *EFFECTS OF PLASMA ON EXCIMER LAMP BASED SELECTIVE ACTIVATION PROCESSES FOR ELECTROLESS PLATING, D.J. Macauley, P.V. Kelly, K.F. Mongey and G.M. Crean, National Microelectronics Research Centre, Lee Maltings, Prospect Row, Cork, Ireland*
- G-IV.4 17:00-17:15 *PULSED LASER DEPOSITION OF MULTICOMPONENT METAL AND OXIDE FILMS, M. Orogowski, S. Metev, G. Sepold, Bremen Institute of Applied Beam Technology, Klagenfurter Str. 2, 28359 Bremen, Germany*
- G-IV.5 17:15-17:30 *SENSITIZED IMPLANTATION OF FLUORESCENT MOLECULES IN POLYMER FILMS BY NEAR-INFRARED LASER IRRADIATION, H. Banjo, H. Fukumura, H. Masuhara, Osaka University, Suita, Osaka 565, Japan; N. Ichinose and S. Kawamishi, Japan Atomic Energy Research Institute, Neyagawa, Osaka 572, Japan*

POSTER SESSION I

17:30-19:00 See programme of this poster session p. G-9 to p. G-11.

Wednesday June 17, 1998
 Mercredi 17 juin 1998

SYMPOSIUM G

Afternoon
 Après-midi

SESSION V

Chairperson: M. Stuke, Max-Planck-Institut, Göttingen, Germany

- G-V.1 14:00-14:30 - Invited - *DIFFRACTION LIMITED OPTICS FOR EXCIMER LASER BASED MICROPROCESSING*, H.-J. Kahlert and B. Burghardt, MicroLas Lasersystem GmbH, Robert-Bosch-Breite 10, 37079 Göttingen, Germany
- G-V.2 14:30-14:45 *MICRODEPOSITION AND MICROETCHING OF DIFFRACTIVE STRUCTURES USING ULTRASHORT LASER PULSES*, I. Zergioti**, S. Mailis, N.A. Vainos, A. Ikiades, C.P. Grigoropoulos*, and C. Fotakis, Foundation for Research and Technology-Hellas, FORTH-IESL, P.O. Box 1527, 71110 Hellas, Greece; *Department of Mechanical Engineering, University of California, Berkeley CA 94720, USA; **Present address: Max-Planck Institute für biophysikalische Chemie, P.O. Box 2841, 37018 Göttingen, Germany
- G-V.3 14:45-15:00 *PHOTOPOLYMERIZATION BY EVANESCENT WAVES: A NEW METHOD TO OBTAIN NANOMETRIC FILMS OF PHOTOPOLYMER*, A. Espanel, C. Ecoffet and D.J. Lougnot, Laboratoire de Photochimie Générale, CNRS-UMR7525, 3 rue Alfred Werner, 68093 Mulhouse, France
- G-V.4 15:00-15:15 *MODIFICATIONS OF POLYETHER-ETHERKETONE SURFACE AFTER 193 NM AND 248 NM EXCIMER LASER RADIATIONS*, P. Laurens and B. Sadras, CLFA, 16 bis av. Prieur de la Côte d'Or, 94114 Arcueil, France; Fr. Decobert, CREA/MSA, 16 bis av. Prieur de la Côte d'Or, 94114 Arcueil cedex, France; F. Arefi and J. Amoureux, Laboratoire des Réacteurs Plasmas, ENSCP, 11 rue P. et M. Curie, 75231 Paris cedex, France
- G-V.5 15:15-15:30 *VUV LASER PROCESSING OF POLYMERS AT 10 EV*, D. Riedel, M.C. Castex, Laboratoire de Physique des Lasers, Université Paris-Nord, Av. J.B. Clément, 93430 Villetaneuse, France
- 15:30-16:00 BREAK
- G-V.6 16:00-16:30 - Invited - *AN UPDATING OF THE PROBLEM OF THERMAL MECHANISMS OF PULSED-LASER SPUTTERING*, R. Kelly and A. Miotello, Dipart. di Fisica, Università di Trento, Povo (TN), Italy
- G-V.7 16:30-16:45 *MONTE CARLO SIMULATION OF THE LASER-INDUCED PLASMA PLUME EXPANSION UNDER VACUUM AND BACKGROUND GASES*, F. Garrelie, J. Aubreton and A. Catherinot, LMCTS-PLM, Faculté des Sciences, 123 Av. A. Thomas, 87060 Limoges, France
- G-V.8 16:45-17:00 *TIME OF FLIGHT ANALYSIS OF LASER-INDUCED PROCESSING IN SAPPHIRE WITH ULTRA-SHORT PULSES*, R. Stoian, H. Varel, A. Rosenfeld, D. Ashkenasi and E.E.B. Campbell, Max-Born-Institut für Nichtlineare Optik und Kurzzeitspektroskopie, P.F. 1107, 12474 Berlin-Adlershof, Germany
- G-V.9 17:00-17:15 *MODELING OF VELOCITY AND SURFACE TEMPERATURE OF THE MOVING INTERFACE DURING LASER ABLATION OF POLYIMIDE AND POLYMETHYLMETHACRYLATE*, H. Schmidt*, J. Ihlemann, Laser-Laboratorium Göttingen, PO Box 2619, 37016 Göttingen, Germany; K. Luther, J. Troe, Inst. f. Phys. Chem., Univ. Göttingen, Tammannstr. 6, 37077 Göttingen, Germany, * present address: MicroLas Lasersystem GmbH, Robert-Bosch-Breite 10, 37079 Göttingen, Germany
- G-V.10 17:15-17:30 *SUB- μ m GRATING FORMATION IN Ta₂O₅-WAVEGUIDES BY FEMTOSECOND UV-LASER ABLATION*, F. Beinhorn, J. Ihlemann, P. Simon, G. Marowsky, Laser-Laboratorium Göttingen e.V., PO Box 2619, 37016 Göttingen, Germany; B. Maisenhölder, J. Edlinger, Balzers Thin Films, 9496 Balzers, Liechtenstein, D. Neuschäfer, D. Anselmetti, Novartis AG, 4002 Basel, Switzerland

POSTER SESSION II

17:30-19:00 See programme of this poster session p. G-12 to p. G-14.

SYMPOSIUM G

Thursday June 18, 1998

Jeudi 18 juin 1998

Morning

Matin

SESSION VI

Chairperson: D.H.A. Blank, *Low Temperature Division, University of Twente, The Netherlands*

G-VI.1 08:30-9:00 - Invited - J. Chung, *POSTECH, Pohang, Korea*

G-VI.2 09:00-9:15 *HIGH DENSITY PLASMA ETCHING OF NiFe, NiFeCo And NiMnSb-BASED MULTILAYERS FOR MAGNETIC STORAGE ELEMENTS*, K.B. Jung, J. Hong, J.A. Caballero, J.R. Childress, S.J. Pearton, *Department of Materials Science and Engineering, University of Florida, Gainesville, FL 32611, USA* and M. Jenson and A.T. Hurst, Jr., *Honeywell Solid State Electronics Center, Plymouth MN 55441, USA*

G-VI.3 09:15-9:30 *FIRST CHEVREL-PHASES COMPOUNDS EPITAXIALLY GROWN BY PULSED LASER DEPOSITION*, X. Guilloux-Viry, N. Lemée, A. Perrin, *LCSIM, UMR CNRS 6511, Université de Rennes I, Campus de Beaulieu, 35042 Rennes Cedex, France*

G-VI.4 09:30-9:45 *OXIDE FILMS DEPOSITED BY REACTIVE PULSED LASER ABLATION*, A. Mele, C. Flamini, *Dipart. di Chimica, Univ. «La Sapienza», P.le A. Moro 5, 00185 Roma, Italy*; R. Teghil, *Dipart. di Chimica, Univ. della Basilicata, Via N. Sauro 85, 85100 Potenza, Italy*; S. Orlando, V. Marotta, *Istituto Materiali Speciali CNR, 85051 Tito Scalo (Pz), Italy*

G-VI.5 09:45-10:00 *CN_x FILMS DEPOSITED BY INTRODUCTION OF GRAPHITE INTO AN EXPANDING AR/N₂ PLASMA*, A. de Graaf, P.D.J. van Deurzen, M.C.M. van de Sanden, D.C. Schram, *Eindhoven University of Technology, Department of Applied Physics, PO Box 513, 5600 MB Eindhoven, The Netherlands* and E. Aldea, G. Dinescu, *National Institute of Lasers, Plasma and Radiation Physics, Low Temperature Plasma Department, PO Box MG 36, Bucharest-Magurele, Romania*

10:00-10:30 BREAK

SESSION VII

Chairperson: I. Zergioti, *Max-Planck-Institut, Göttingen, Germany*

G-VII.1 10:30-11:00 - Invited - *UTILIZATION OF CU(HFAC)TMVS PRECURSOR GAS IN LCVD INTEGRATED CIRCUIT REPAIR SYSTEM*, S. Leppävuori, J. Remes, H. Moilanen, *Microelectronics Laboratory, EMPART Research Group of Infotech Oulu, University of Oulu, 90570 Oulu, Finland*

G-VII.2 11:00-11:15 *EXCIMER LASER ABLATION OF MOLTEN METALS AS FOLLOWED BY ULTRAFAST PHOTOGRAPHY*, Z. Toth, B. Hopp, Z. Kantor*, F. Ignacz, T. Szörényi and Z. Bor*, *Research Group on Laser Physics of the Hungarian Academy of Sciences*, *Department of Optics and Quantum Electronics, *Jozsef Attila University, POB 406, Szeged, 6701, Hungary*

G-VII.3 11:15-11:30 *UV LASER POLISHING OF THICK DIAMOND FILMS FOR IR WINDOWS*, S. Gloor, W. Lüthy, H.P. Weber, *Institute of Applied Physics, Sidlerstr. 5, 3012 Berne, Switzerland*; S.M. Pimenov, V.G. Ralchenko, V.I. Konov, *General Physics Institute, 38 Vavilov Street, 117942 Moscow, Russia* and A.V. Khomich, *Institute of Radio Engineering & Electronics, Ac. Vvedensky Sq.1, 141120 Fryazino, Moscow Region, Russia*

G-VII.4 11:30-11:45 *LASER CLEANING OF TINY PARTICLES IN A THIN LIQUID LAYER AND ITS THEORETICAL MODEL*, Y.F. Lu, Y. Zhang and W.D. Song, *Laser Microprocessing Laboratory, Department of Electrical Engineering and Data Storage Institute, National University of Singapore, 10 Kent Ridge Crescent, 119260 Singapore*

G-VII.5 11:45-12:00 *EFFECTS OF COBALT THIN FILMS ON THE α -Si CRYSTALLISATION INDUCED BY EXCIMER LASER IRRADIATION*, S. Luby, *Slovak Academy of Sciences*; G. Leggieri, *University of Lecce, Italy* and P. Mengucci, *University of Ancona, Italy*

12:00-14:00 LUNCH

SYMPOSIUM G

Thursday June 18, 1998
Jeudi 18 juin 1998

Afternoon
Après-Midi

SESSION VIII

Chairperson: A. Catherinot, Université de Limoges, France

- G-VIII. 14:00-14:30 *MAGNETIC FIELD ASSISTED PULSED LASER DEPOSITION, C. de Julian Fernandez, J.L. Vassent and D. Givord, Laboratoire Louis Néel, CNRS, BP 166, 38042-Grenoble-Cedex, France*
- G-VIII.2 14:30-14:45 *NITRIDING WITH ION BEAM FROM HALL TYPE SOURCE, M. Bacal, Laboratoire P.M.I., UMR 7648 du C.N.R.S., Ecole Polytechnique, 91128 Palaiseau, France and J.-P. Peyre, C.E.T.I.M., 52, avenue Felix-Louat, B.P. 80067, 60304 Senlis, France*
- G-VIII.3 14:45-15:00 *LASER ASSISTED CVD OF BORON CARBIDE AT ATMOSPHERIC PRESSURE, J.C. Oliveira, P. Paiva, M.N. Oliveira and O. Conde, Physics Department, University of Lisbon, Campo Grande, Ed. CI, 1700 Lisboa, Portugal*
- G-VIII.4 15:00-15:15 *DEPOSITION OF CRYSTALLINE TEFLON THIN FILMS BY VUV RADIATION PHOTODECOMPOSITION, T. Katoh and Y. Zhang, Sumitomo Heavy Industries, Ltd., 2-1-1 Yatocho, Tanashi, Tokyo 188, Japan*
- G-VIII.5 15:15-15:30 *UV LASER SURFACE PROCESSING OF METALLIC ALLOYS: COMPARISON OF EXPERIMENTAL AND NUMERICAL RESULTS, G. Nicolas, A. Yanez, A. Ramil, J.C. Alvarez, E. Saavedra, Escuela Politecnica Superior, Universidad de La Coruna, C/Mendizabal s/n, 15403 Ferrol, Spain; J.L. Ocana, A. Garcia-Beltran, C. Molpeceres, ETSIIMLAS Dpto de Fisica Aplicada (U.P.M.), C/ Jose Gutierrez Abascal 2, 28006 Madrid, Spain; M. Autric, IRPHE, Laboratoire LP3, 163 Av. de Luminy, 13009 Marseille, France*
- 15:30-16:00 BREAK

SESSION IX

Chairperson: J. Perrière, Groupe de Physique des Solides, Universités Paris VII et VI, France

- G-IX.1 16:00-16:30 *EXCIMER LASER IRRADIATION INDUCED FORMATION OF DIAMOND-LIKE CARBON LAYER ON GRAPHITE, A. Mechler, P. Heszler*, Z. Kantor, T. Szörényi* and Z. Bor, Department of Optics and Quantum Electronics, Jozsef Attila University, *Research Group on Laser Physics of the Hungarian Academy of Sciences, POB 406, Szeged 6701, Hungary*
- G-IX.2 16:30-16:45 *LIQUID CRYSTAL FILMS GROWN BY PULSED LASER DEPOSITION, J. Gonzalo, P.E. Dyer, H.V. Snelling, Department of Physics, University of Hull, Hull HU6 7RX, UK and M. Hird, Department of Chemistry, University of Hull, Hull HU6 7RX, UK*
- G-IX.3 16:45-17:00 *ABLATION OF SILVER AT 355 nm IN BACKGROUND GASES, T.N. Hansen, J. Schou, OFD, Riso National Laboratory, 4000 Roskilde, Denmark; Y.Q. Shen, NKT Research Center, Priorparken 878, 2605 Brøndby, Denmark and J.G. Lunney, Department of Physics, Trinity College, Dublin 2, Ireland*
- G-IX.4 17:00-17:15 *UNUSUAL GROWTH OF PULSED LASER DEPOSITED BISMUTH FILMS ON Si(100), A. Dauscher, M.O. Boffoué, B. Lenoir, R. Martin-Lopez, N. Maloufi, H. Scherrer, Laboratoire de Physique des Matériaux, UMR 7556, Ecole des Mines, Parc de Saurupt, 54042 Nancy, France*
- G-IX.5 17:15-17:30 *MnO THIN FILMS BY PULSED LASER DEPOSITION, W. Neubeck, C. Vettier, ESRF, BP 220, 38043 Grenoble Cedex, France and D. Givord, L. Ranno, Lab. Louis Néel, CNRS, BP 166, 38042 Grenoble Cedex, France*

POSTER SESSION III

17:30-19:00 See programme of this poster session p. G-15 to p. G-17.

SYMPOSIUM G

Friday June 19, 1998
Vendredi 19 juin 1998

Morning
Matin

SESSION X

Chairperson: I. Boyd, University College London, UK

- G-X.1 08:30-9:00 - Invited - INDUSTRIAL APPLICATIONS OF PULSED LASERS TO MATERIALS MICROPROCESSING, M.C. Gower, Exitech Ltd, Hanborough Park, Long Hanborough, Oxford OX8 8LH, UK
- G-X.2 09:00-9:15 A NEW PROCESS TO MANUFACTURE THIN SiGe AND SiGeC EPITAXIAL FILMS ON SILICON BY ION AND EXCIMER LASER ANNEALING, P. Boher and J.L. Stehle, SOPRA S.A., 26 rue Pierre Joigneaux, 92270 Bois-Colombes, France; E. Fogarassy, Laboratoire PHASE, BP 20, 67037 Strasbourg Cedex, France
- G-X.3 09:15-9:30 POLYMER REPLICATION OF 3D MICRO STRUCTURES EMPLOYING A HIGHLY FLUORINE CONTAINING SEPARATION LAYER, A. Braun, J. Meinhardt, K. Zimmer, B. Höfelbarth, F. Bigl, Institute of Surface Modification, Permoserstrasse 15, 04318 Leipzig, Germany
- G-X.4 09:30-9:45 MODELING OF NON-STATIONARY THERMAL VOLUME DESTRUCTION OF POLYMERS BY LASER LIGHT, N. Arnold, D. Bäuerle, Angewandte Physik, J. Kepler University, Altenbergerstraße 69, 4040 Linz, Austria and N. Bityurin, Institute of Applied Physics RAS, Uljanov St., 603600 Nizhnii Novgorod, Russia
- G-X.5 09:45-10:00 EVIDENCE FOR VOLUME BOILING DURING LASERABLATION OF SINGLE CRYSTALLINE TARGETS, V. Craciun and D. Craciun, Laser Dept, NILPRP, Bucharest V, Romania
- 10:00-10:30 BREAK

SESSION XI

Chairperson: R.D Vispute, CSR, University of Maryland, College Park, USA

- G-XI.1 10:30-10:45 PLASMA IMMERSION ION IMPLANTATION FOR SHALLOW JUNCTIONS IN SILICON, L. Pinier, A.H. Abdulhadi, Zs. Makaro, N.Q. Khanh, M. Adam, I. Barsony, J. Poortmans* and G.J. Adriaenssens**, Res. Inst. for Techn. Phys. Mat. Sci. - MFA, P.B.Box 49, 1525 Budapest, Hungary. *IMEC, Kapeldreef 75, Leuven 3001, Belgium; **KU Celestijnenlaan 200D, Heverlee-Leuven 3001, Belgium
- G-XI.2 10:45-11:00 TEMPERATURE DEPENDENCE OF EPITAXIAL GROWTH OF MAGNETORESISTIVE La₂Ca₂MnO₇ FILMS ON MgO(001), L. Ramo, A. Llobet, M.B. Hunt, J. Pierre, D. Givord, Laboratoire Louis Néel, Polygone CNRS, BP 166, 25 avenue des Martyrs, 38042 Grenoble Cedex 09, France
- G-XI.3 11:00-11:15 GROWTH OF NON STOICHIOMETRIC OXIDE PHASES BY LASER ABLATION, A. Gutierrez-Llorente, M. Morcrette, A. Laurent, P. Barboux*, Groupe de Physique des Solides, Universités Paris VII et Paris VI, Tour 23, 2 Place Jussieu, 75251 Paris Cedex 05, France; *Physique de la Matière Condensée, Ecole Polytechnique, 91128 Palaiseau Cedex, France.
- G-XI.4 11:15-11:30 RELAXED LASER DEPOSITION OF SnO₂ THIN FILMS, N. Méquillet, D. Demange, M. Givert and A. Chambaudet, Laboratoire de Microanalyses Nucléaires, 16 route de Gray, 25000 Besançon, France
- G-XI.5 11:30-11:45 CHARACTERISTICS OF THE MICROSTRUCTURES OF ALUMINA-BASED REFRACTORY MATERIALS TREATED WITH CO₂, ND-YAG AND DIODE LASERS, L. Bradley, L. Li, Manufacturing Division, Mechanical Engineering, F.H. Stott, Corrosion and Protection Centre, University of Manchester, Institute of Science and Technology (UMIST), PO Box 88, Manchester M60 1QD, UK
- G-XI.6 11:45-12:00 IN-SITU MEASUREMENT OF LASER IRRADIATED ZINC SULPHIDE FILMS, J.D. Hayland, D. Sands, P.H. Key, Physics Department, University of Hull, Cottingham Road, Hull HU6 7RX, UK
- 12:00-14:00 LUNCH

SYMPOSIUM G

Friday June 19, 1998
Vendredi 19 juin 1998

Afternoon
Après-midi

SESSION XII

Chairperson: C. Boulmer-Leborgne, GREMI, Université d'Orléans, Orléans, France

- G-XII.1 14:00-14:15 *STABILITY, ENHANCEMENT OF ELASTIC PROPERTIES AND STRUCTURE OF MULTILAYERED AMORPHOUS CARBON FILMS, S. Logothetidis, M. Gioti, C. Charitidis, P. Patsalas, J. Arvanitidis and J. Stoemenos, Department of Physics, Aristotle University of Thessaloniki, 54006 Thessaloniki, Greece*
- G-XII.2 14:15-14:30 *XeF EXCIMER LASER ABLATION OF METALLIC TARGETS PROBED BY ENERGY-SELECTIVE TIME OF FLIGHT MASS SPECTROMETRY, S. Amoruso*, V. Berardi**, R. Bruzzese**, R. Velotta**, N. Spinelli*, X. Wang**, Istituto Nazionale per la Fisica della Materia and *D.I.F.A. - Università della Basilicata, via della Tecnica 3, 85100 Potenza, Italy; **Dipartimento di Scienze Fisiche, Complesso Universitario di Monte S. Angelo, Via Cinzia, 80126 Napoli, Italy*
- G-XII.3 14:30-14:45 *ON THE ROLE OF AMBIANT OXYGEN IN FORMATION OF LEAD TITANATE PLD THIN FILMS, N. Chaoui, E. Millon, J.F. Muller, Laboratoire de Spectrométrie de Masse et de Chimie Laser, IPEM, Université de Metz, 1 bd Arago, 57078 Metz cedex 3, France and P. Ecker, W. Bieck, H.N. Migeon, Centre de Recherche Public, Laboratoire d'Analyse des Matériaux, 162 avenue de la Faïencerie, 1511 Luxembourg, Luxembourg*
- G-XII.4 14:45-15:00 *DEPOSITION OF THIN FILMS OF METALS ON CARBIDES AND SILICATE MICRO-AGGREGATES AND APPLICATIONS, M. Grosmann, E. Kintz, A. Akhmin, EPF, ENSPS-ULP, 67000 Strasbourg, France and V.G. Syrkin, GNICTEOS, Ac. Sc., Moscow, Russia*
- G-XII.5 15:00-15:15 *STUDY OF METALLIC THIN FILM GROWTH BY PLASMA SPUTTER DEPOSITION, A.L. Thomann, J.P. Rozenbaum, P. Brault, GREMI, Université d'Orléans, Faculté des Sciences, B.P. 6759, 45067 Orléans cedex 2, France; C. Andreazza-Vignolle, P. Andreazza, H. Estrade-Szwarczkopf, and B. Rousseau, CRMD, 1B rue de la Férollerie, 45071 Orléans cedex 2, France*
- G-XII.6 15:15-15:30 *PULSED LASER ABLATION AND DEPOSITION OF $ZnS_{1-x}Se_x$ THIN FILMS ON QUARTZ: ENERGY GAP MODULATION AND EFFECT OF THE DISORDER ON THE ABSORPTION COEFFICIENT, M. Ambrico, C. Spezzacatena, D. Smaldone I.M.S.-C.N.R. via S.Loja-Zona Industriale, 85050 Tito Scalco (PZ), Italy, V. Capozzi, G. Perna, Dip. Fisica and Unita' INFN Università di Bari via Amendola 173, 70100 Bari, Italy*

END OF SYMPOSIUM G

SYMPOSIUM G

SYMPOSIUM G
POSTER SESSIONS

Tuesday June 16, 1998

Mardi 16 juin 1998

Afternoon

Après-midi

Poster Session I

17:30-19:00

- G-I/P1 *THE PRODUCTION OF THE NEW CUBIC FeN PHASE BY REACTIVE MAGNETRON SPUTTERING, L. Rissanen, P. Schaaf, M. Neubauer, K.-P. Lieb Universität Göttingen, II. Physikalisches Institut, Bunsenstrasse 7/9, 37073 Göttingen, Germany; J. Keinonen, T. Sajavaara, Accelerator Laboratory, University of Helsinki, P.O.Box 43, 00014 Helsinki, Finland*
- G-I/P2 *LASER-NITRIDING OF IRON: EFFECTS OF THE SPATIAL INTENSITY DISTRIBUTION, F. Landry, P. Schaaf, M. Neubauer, K.-P. Lieb; Universität Göttingen, Zweites Physikalisches Institut, Bunsenstrasse 7/9, 37073 Göttingen, Germany*
- G-I/P3 *DRY ETCHING OF CU WITH Cl₂ STIMULATED BY SYNCHROTRON RADIATION, H. Raaf and N. Schwentner, Institut für Experimentalphysik, Freie Universität Berlin, Arnimallee 14, 14195 Berlin, Germany*
- G-I/P4 *PULSED LASER DEPOSITION FROM SOLID AND MOLTEN METALS, T. Szörényi, Z. Kantor*, Z. Toth, P. Heszler and L. Gombos*; Research Group on Laser Physics of the Hungarian Academy of Sciences, *Department of Optics and Quantum Electronics, Jozsef Attila University, POB 406, Szeged 6701, Hungary*
- G-I/P5 *ON THE DYNAMICS OF LASER - INDUCED ETCHING OF TUNGSTEN - SiO₂- COMPOSITES, K. Piglmayer, H. Schieche, Angewandte Physik, Johannes-Kepler-Universität Linz, 4040 Linz, Austria*
- G-I/P6 *INFRARED ABSORPTION DIAGNOSIS OF ORGANOSILICON/OXYGEN PLASMA IN A MICROWAVE MULTI-POLAR DECR PLASMA, P. Raynaud, T. Amilis, Y. Segui, Laboratoire de Génie Electrique, CNRS, Université Paul Sabatier, 118 route de Narbonne, 31062 Toulouse cedex, France*
- G-I/P7 *MODELLING OF LASER PRODUCED PLASMA AND TIME OF FLIGHT EXPERIMENTS IN UV LASER ABLATION OF ALUMINUM TARGETS, S. Amoroso, Istituto Nazionale per la Fisica della Materia and D.I.F.A., Università della Basilicata, via della Tecnica 3, 85100 Potenza, Italy*
- G-I/P8 *INVESTIGATION OF LASER PLASMA FOR SOLID ELEMENT COMPOSITION MICROANALYSIS, V. Detalle, J.-L. Lacour, P. Mauchien, A. Semerok, CEA Saclay, DPE/SPCP/LSLA, 91191 Gif sur Yvette Cédex France*
- G-I/P9 *LASER ABLATION EFFICIENCY OF METAL SAMPLES WITH UV LASER NANOSECONDS PULSES, B. Sallé, C. Chaléard, V. Detalle, J.L. Lacour, P. Mauchien, C. Nouvellon, A. Semerok, CEA Saclay, DPE/SPCP/LSLA, 91191 Gif sur Yvette Cédex France*
- G-I/P10 *STOECHIOMETRIC STUDY OF ABLATION PROCESS FOR MULTIELEMENTAL ANALYSIS BY OPTICAL EMISSION SPECTROSCOPY ON LASER PRODUCED PLASMA, C. Nouvellon, C. Chaléard, J.L. Lacour, P. Mauchien, Analytical Laser Spectroscopy Group, CEA Saclay 91191 Gif sur Yvette Cédex, France*
- G-I/P11 *EXPERIMENTAL INVESTIGATIONS OF LASER ABLATION EFFICIENCY OF PURE METALS WITH FEMTO, PICO AND NANOSECOND PULSES, A. Semerok, C. Chaléard, V. Detalle, J.-L. Lacour, P. Mauchien, P. Meynadier*, C. Nouvellon, B. Sallé, P. Palianov**, M. Perdrix*, G. Petire**, DPE/SPCP/LSLA, *DSM/DRECAM/SPAM, **DSM/DRECAM/SRSIM, CEA Saclay, 91191 Gif sur Yvette Cédex, France*
- G-I/P12 *UV INTENSITY MEASUREMENT FOR 308 NM EXCIMER LAMPS USING CHEMICAL ACTINOMETER, J.-Y. Zhang and I.W. Boyd, Dept. of Electronic and Electrical Engineering, University College London, Torrington Place, London WC1E 7JE, UK; H. Esrom, Fachhochschule für Technik Mannheim, Institute of Technology Mannheim, 68163 Mannheim, Germany*
- G-I/P13 *GROWTH OF TANTALUM PENTOXIDE FILM BY PULSED LASER DEPOSITION, J.-Y. Zhang and I.W. Boyd, Electronic & Electrical Engineering, University College London, Torrington Place, London WC1E 7JE, UK*
- G-I/P14 *NONLINEAR OPTICAL PROPERTIES OF METALLIC SURFACES F.P. Lohner and A.A. Villaeys, Institut de Physique et Chimie des Matériaux de Strasbourg / GONLO, 23 rue du Loess, 67037 Strasbourg Cedex, France*

SYMPOSIUM G

- G-I/P15 **THE INFLUENCE OF CARBON ON LASER-NITRIDING OF STEEL**, P. Schaaf, F. Landry, M. Neubauer, Universität Göttingen, Zweites Physikalisches Institut, Bunsenstrasse 7/9, 37073 Göttingen, Germany
- G-I/P16 **PATTERNED SURFACES IN P-TYPE SILICON BY PHOTODEFINED ETCHING**, M.C. Martins, R.M. Gamboa, J.M. Alves, J.M. Serra, A.M. Vallêra, Dep. Física, Univ. de Lisboa, Campo Grande, 1700 Lisboa, Portugal
- G-I/P17 **OPTICAL PROPERTIES OF CdS AND CdSe LASER ABLATED THIN FILMS ON QUARTZ V**, G. Capozzi, G. Perna, Dipartimento di Fisica and Unita, INFN dell'Università di Bari via Amendola 173, 70100 Bari, Italy; M. Ambrico, C. Spezzacatena, D. Smaldone, I.M.S.-C.N.R., C.da S.Loja-Zona Industriale, 85050 Tito Scalo (PZ), Italy; A.C. Felici, T. Papa, M. Piacentini Dip.di Energetica, Università La Sapienza Via A. Scarpa 14, 00161 Roma, Italy
- G-I/P18 **TiN GROWTH ON Si(100) BY PULSED LASER DEPOSITION USING HOMOGENIZED KrF EXCIMER LASER BEAM**, K. Ohta, K. Sugioka*, H. Takai and, K. Midorikawa*, Tokyo Denki University, kanda 2-2, Chiyoda, Tokyo, Japan, *RIKEN, Hirosawa 2-2, Wako, Saitama, Japan
- G-I/P19 **SiO₂ THIN FILM PREPARATION USING DIELECTRIC BARRIER DISCHARGE DRIVEN EXCIMER LAMPS**, Noritaka Takezoe, Atsushi Yokotani, Kou Kurosawa, Wataru Sasaki, Dept. of Electric and Electronic Engr, Miyazaki Univ, Miyazaki, Japan; Tatsushi Igarashi, Hiromitsu Matsuni, Research and Development Center, USHIO Inc., Himeji, Japan
- G-I/P20 **REACTIVE LASER ABLATION FOR ALUMINIUM NITRIDE FILM GROWTH**, A. Basillais, C. Vivien, J. Hermann, C. Boulmer-Leborgne and J. Perrière*, GREMI, Université d'Orléans, BP6759, 45067 Orléans cedex 2, France; *GPS, Université Paris 6 et 7, 2 place Jussieu, Tour 23, 75251 Paris cedex 05, France
- G-I/P21 **GROWTH OF ALUMINIUM NITRIDE LAYER ON ALUMINIUM ALLOY BY EXCIMER LASER INDUCED PLASMA**, E. Sicard, L. Vivet, C. Boulmer-Leborgne and C. Andreazza-Vignolle*, GREMI and CRMD* Laboratories, Université d'Orléans, BP 6759, 45067 Orléans cedex 2, France
- G-I/P22 **PLASMA SPECTROSCOPY FOR REACTIVE CARBON ABLATION IN NITROGEN GAS**, C. Vivien, A. Basillais, J. Hermann and C. Boulmer-Leborgne - GREMI, Université d'Orléans, BP6759, 45067 Orléans cedex 2, France
- G-I/P23 **REACTION OF THE ZNSE SURFACE WITH CHLORINE STIMULATED BY SINCHROTRON RADIATION**, V. Stepanenko, M. Dobrotvorskaya, P. Mateychenko, I. Krasovsky, Institute for Single Crystals, 60 Lenin av., Kharkov 310001, Ukraine
- G-I/P24 **NEAR-THRESHOLD LASER-INDUCED SPUTTERING OF ALUMINUM SURFACE BY UV AND IR IRRADIATION**, V.S. Burakov, A.F. Bokhonov, M.I. Nedel'ko, and N.V. Tarasenko, Institute of Molecular and Atomic Physics National Academy of Sciences of Belarus, 70 Scaryna Ave., 220072 Minsk, Belarus
- G-I/P25 **INFLUENCE OF THERMAL TREATMENT ON THE PROPERTIES OF THE PLASMA SPRAY DEPOSITED NI/AL COATINGS**, S. Tamulevicius, R. Dargis, A. Meskauskas, Physics Department, Kaunas University of Technology, Studentu 50, 3031 Kaunas, Lithuania; K. Slapikas, Institute of Physical Electronics, Kaunas University of Technology, 3000 Kaunas, Lithuania
- G-I/P26 **MODELING OF LASER ABLATION PLUME EXPANSION: AMBIENT GAS EFFECTS, VORTICES**, N.M. Bulgakova, Institute of Thermophysics SB RAS, prosp. Lavrentyev 1, 630090 Novosibirsk, Russia
- G-I/P27 **THERMAL AND PLASMA ABSORPTION EFFECTS DURING PULSED LASER ABLATION OF SOLIDS**, A.V. Bulgakov, N.M. Bulgakova and S.A. Migunov, Institute of Thermophysics, prosp. Lavrentyev 1, 630090 Novosibirsk, Russia
- G-I/P28 **LASER SPUTTERING OF SOLIDS: TRANSITION FROM NORMAL EVAPORATION TO PHASE EXPLOSION**, N.M. Bulgakova and A.V. Bulgakov, Institute of Thermophysics SB RAS, prosp. Lavrentyev 1, 630090 Novosibirsk, Russia
- G-I/P29 **PULSE LASER REACTIVE TECHNOLOGY: GROWTH, STRUCTURE AND PROPERTIES OF TELLURIDE CADMIUM-MERCURY THIN LAYERS**, B. Kotlyarchuk, D. Popovych, V. Savchuk, V. Savytski, Pidstryhach Institute for Applied Problems of Mechanics and Mathematics National Academy of Sciences of Ukraine, 3 b Naukova Street, 290601, Lviv, Ukraine
- G-I/P30 **VELOCITY DISTRIBUTIONS OF PARTICLES PRODUCED BY LASER ABLATION OF SILICON AND THEIR INTERPRETATION IN TERMS OF ABLATION MECHANISMS**, A.V. Bulgakov, O.F. Bobrenok and M.R. Predtechensky, Institute of Thermophysics, prospect Lavrentyev 1, 630090 Novosibirsk, Russia
- G-I/P31 **STIMULATED REACTION OF GaAs WITH Cl₂: STUDY OF REACTION PRODUCTS**, V. Stepanenko, M. Dobrotvorskaya, Institute for Single Crystals, 60 Lenin av., Kharkov 310001, Ukraine, and U. Sterler, H. Rauf, N. Schwenner, Institut für Experimentalphysik, FU Berlin, Arnimallee 14, 14195 Berlin, Germany
- G-I/P32 **PLASMA STIMULATED REDISTRIBUTION IMPURITIES IN Si AND ITS APPLICATIONS**, A.N. Buzynin, A.E. Luk'yanov, V.V. Osiko, V.V. Voronkov, General Physics Institute of RAS, 117942, 38 Vavilov st., Moscow, Russia

SYMPOSIUM G

- G-I/P33 *UV ETCHING ACCOMPANIED BY MODIFICATIONS*, N. Bityurin, Institute of Applied Physics Rus. Ac. Sci., 46 Ul'janov str., 603600, Nizhnii Novgorod, Russia
- G-I/P34 *AFM AND MICROSTRUCTURE STUDIES OF IMPLANTED CARBON IN SILICON UPON EXCIMER LASER ANNEALING*, W. Wu, D.H. Chen, J.B. Xu, S.P. Wong, I.H. Wilson, Department of Electronic Engineering, The Chinese University of Hong Kong, Hong Kong
- G-I/P35 *SURFACE MODIFICATION OF GaAs SINGLE CRYSTALS BY LASER INFRARED LIGHT*, P. Kosobouiski, A. Danylov, The University L'vivska Politechnika, 12 Bandery Str., 290646 Lviv, Ukraine
- G-I/P36 *MONTE-CARLO SIMULATION OF ABOVE-SURFACE NEUTRALIZATION OF HIGHLY CHARGED IONS*, M.N. Mirakhmedov, R.A. Salimova, Institute of Electronics, 700143 Tashkent, Uzbekistan
- G-I/P37 *TEA-CO₂ LASER INDUCED DAMAGE OF TiN AND (TiAl)N COATINGS*, B. Gakovic, M. Trtica, T. Nenadovic and T. Gredic, Institute of Nuclear Sciences Vinca, PO Box.522,11001 Belgrade, Yugoslavia
- G-I/P38 *UV LASER INTERFACIAL SYNTHESIS OF CN-BCN LAYERS ON DIAMOND FILMS IN BORAZINE AND AMMONIA*, M. Ugarov, V. Ageev, A. Karabutov, E. Loubnin, S. Pimenov, V. Konov, Natural Sciences Center of General Physics Institute, 38 Vavilov str., 117942 Moscow, Russia, and A. Bensaoula, University of Houston, Space Vacuum Epitaxy Center, SR1, 4800 Calhoun, Houston Texas, USA
- G-I/P39 *LASER-DRIVEN PLASMA CVD OF CN/BN COMPOUND FILMS*, V. Ageev, M. Ugarov, E. Loubnin, V. Konov, Natural Sciences Center of General Physics Institute, 38 Vavilov str., 117942 Moscow, Russia, and A. Bensaoula, N. Badi, A. Tempez, and D. Starikov, University of Houston, Space Vacuum Epitaxy Center, SR1, 4800 Calhoun, Houston Texas, USA
- G-I/P40 *NON-LINEAR LASER TRANSIENT PHOTOCONDUCTIVITY IN BORON NITRIDE FILMS*, S. Klimentov, V. Ageev, E. Loubnin, M. Ugarov, S. Garnov, General Physics Institute, 38 Vavilov str., 117942 Moscow, Russia, and A. Bensaoula, N. Badi, A. Tempez, and D. Starikov, University of Houston, Space Vacuum Epitaxy Center, SR1, 4800 Calhoun, Houston Texas, USA
- G-I/P41 *COMPUTER MODELLING OF STATISTICAL CHARACTERISTICS OF NITROGEN LASER IMPULSE IN NON-LINEAR MEDIUM*, V.A. Kazartsev, N.V. Brazovskaya Altai State Technical University, Lenin-street 46, box-524, 656061 Barnaul, Russia
- G-I/P42 *LASER DEPOSITION OF SEMICONDUCTING THIN FILMS FROM Fe(CO)₅ VAPORS*, S.A. Mulenko, M.M. Nishchenko, Institute for Metal Physics NAS of Ukraine, 252680 Kiev, Ukraine and V.S. Ovechko, Kiev Taras Shevchenko University, 252127 Kiev, Ukraine
- G-I/P43 *LASER-INDUCED RADIATIVE RISING OF DEFECTS ON TO SURFACE AND METAL SURFACE DESTRUCTION*, A.F. Banishev, V. Ya. Panchenko, A.V. Shishkov, NICTL - Laser Research Center Center for Technological Lasers of Russian Academy Science, 140700 Shatura, Moscow Region, Russia

SYMPOSIUM G

Wednesday June 17, 1998
Mercredi 17 juin 1998

Afternoon
Après-midi

Poster Session II
17:30-19:00

- G-II/P1 PULSED LASER REACTIVE ABLATION OF III GROUP ELEMENTS IN AMMONIA ATMOSPHERE: PHOTOIONIZATION THRESHOLDS AND STRUCTURES OF $ME(NH_3)_n$ CLUSTERS, T.M. Di Palma, A. Latini, M. Satta, A. Giardini Guidoni, Dipart. di Chimica, Univ. «La Sapienza», P.le A. More 5, 00185 Roma, Italy
- G-II/P2 REACTIVE ION ETCHING OF $CoSi_2$ IN CF_4/Ar PLASMA, G. Beddies, M. Falke, S. Teichert, B. Gebhardt, H.-J. Himeberg, Institute of Physics, Chemnitz University of Technology, 09107 Chemnitz, Germany
- G-II/P3 WC-Co CUTTING TOOL SURFACE MODIFICATIONS INDUCED BY PULSED LASER TREATMENT, E. Cappelli, F. Pinzari, P. Ascarelli, CNR-IMAI, P.O.B.10, 00016 Monterotondo Scalo, Roma, Italy, and S. Orlando, CNR-IMS., Zona Ind. di Tito Scalo, 85050 Tito Scala, Potenza, Italy
- G-II/P4 CHARACTERIZATION OF α -SiN:H FILMS DEPOSITED BY ArF LASER PHOTOLYSIS OF DISILANE AND AMMONIA, N. Banerji, J. Serra, S. Chiussi, F. Lusquinos, B. Leon, M. Perez-Amor, Departamento de Física Aplicada, Universidad de Vigo, Lagoas Marcosende 9, 36207 Vigo, Spain
- G-II/P5 USE OF A DUPLEX PLASMA PROCESS FOR THE IMPROVEMENT OF CORROSION RESISTANCE OF STEEL, L. Mouri, I. Mabilie, C. Fiaud, J. Amoureux, Laboratoire de génie des procédés plasmas et traitements de surface (ENSCP), 11 rue Pierre et Marie Curie, 75231 Paris Cedex 05, France
- G-II/P6 LASER MODIFICATION OF MATERIAL SURFACE PROPERTIES FOR IMPROVED WETTABILITY AND ADHESION, J. Lawrence, L. Li, Manufacturing Division, Department of Mechanical Engineering, University of Manchester Institute of Science & Technology (UMIST), PO Box 88, Manchester, M60 1QD, UK; J.T. Spencer, Research & Technology, 8709, BNFL, Springfields Works, Salwick, Preston, PR4 0XJ, UK
- G-II/P7 MODELING AND DYNAMIC SIMULATION OF ULTRAVIOLET INDUCED GROWING INTERFACES, J. Flicstein, E. Guillonnet, S. Pata, L.S. Kee Chun, J.F. Palmier, J.L. Courant, FT, CNET, DTD, Laboratoire de Bagneux, 92225 Bagneux, France
- G-II/P8 A NOVEL METHOD FOR LASER INDUCED PERIODIC DOMAIN REVERSAL IN KTP, K. Daneshvar, Electrical Engineering Department, University of North Carolina, Charlotte NC 28223, USA
- G-II/P9 NITRIDATION OF ZIRCONIUM IN NH_3 PLASMA, A. Straboni, L. Pichon, T. Girardeau, M. Drouet, Laboratoire de Métallurgie Physique, Université de Poitiers, SP2MI, UMR 6630 CNRS, BP 179, 86960 Futuroscope cedex, France and J. Perrière, Groupe de Physique des Solides, Université Paris VI, tour 23, 2 place Jussieu, 75251 Paris cedex 05, France
- G-II/P10 KINETIC STUDY OF 222 NM EXCIMER LAMP INDUCED DECOMPOSITION OF PALLADIUM-ACETATE FILMS, Z. Geretovszky and L.W. Boyd, University College London, Department of Electronic and Electrical Engineering, Torrington Place, London WC1E 7JE, UK
- G-II/P11 PLD - AN ALTERNATIVE ROUTE FOR THE GROWTH OF MAGNETIC THIN FILMS, A.G. Jenner, L. Stone, J. Hayes, H.V. Snelling and R.D. Greenough, Department of Physics, University of Hull, Hull, HU6 7RX, UK
- G-II/P12 DUV LASER INDUCED DEPOSITION OF α -C:H FROM CH_2I_2 AT ROOM TEMPERATURE, M. Lindstam, M. Boman, Uppsala University, Ångström Laboratory, Department of Inorganic Chemistry, Box 538, 75121 Uppsala, Sweden and K. Piglmayer, Johannes Kepler University, Institute of Experimental Physics, Department of Applied Physics, 4040 Linz, Austria
- G-II/P13 GROWTH OF DOPED CRYSTALLINE Y_2O_3 THIN FILMS BY P.L.D. FOR LASER WAVEGUIDE, A. Aron, A. Huignard, J. Thery, L.C.A.E.S. UMR-7574, ENSCP, 11 rue Pierre et Marie Curie, 75231 Paris Cedex 05, France; J. Perrière, A. Laurent, G.P.S., Univ Paris VII, URA-17, Tour 23, 2 place Jussieu, 75251 Paris Cedex 05, France
- G-II/P14 A COMPARATIVE REVIEW OF THE EFFECTS OF LASER WAVELENGTH ON LASER CLEANING OF CHLORINATED RUBBER, M.J.L. Schmidt, L. Li, Manufacturing Division, Department of Mechanical Engineering, University of Manchester Institute of Science and Technology (UMIST), PO Box 88, Manchester, M60 1QD, UK; J.T. Spencer, Research & Technology, B516, BNFL, Springfields Works, Salwick, Preston, PR4 0XJ, UK; P.H. Key, Department of Applied Physics, University of Hull, Hull, HU6 7RX, UK
- G-II/P15 GROWTH OF MICROCRYSTALLINE b-SiC FILMS ON SILICON BY ECR PLASMA CVD, S.J. Toal, H.S. Reehal, South Bank University, SEEIE, 103 Borough Road, London SE1 0AA, UK; N.P. Barradas, C. Jaynes, University of Surrey, Guildford, GU2 5XH, UK

SYMPOSIUM G

- G-II/P16 **ENHANCEMENT OF DIAMOND NUCLEATION ON SILICON SUBSTRATES IN PULSED LASER ASSISTED HOT FILAMENT CVD**, R. Schliesing, H. Zacharias, Physikalisches Institut, Westfälische Wilhelms-Universität, Wilhelm-Klemm-Straße 10, 48149 Münster, Germany; Q. Wang, V. Buck, Fachbereich Physik, Universität-GH Essen, Universitätsstraße 3, 45117 Essen, Germany
- G-II/P17 **EXCIMER LASER-INDUCED MODIFICATION IN PMMA 1 NI-ACETYLACETONATE FILMS FOR SELECTIVE METALLIZATION**, A. Jadin, K. Kolev and L.D. Laude, Laboratoire de Physique de l'Etat Solide, Université de Mons-Hainaut, 7000 Mons, Belgium
- G-II/P18 **DYNAMICS OF LASER PULSE-INDUCED MELTS IN Ni-P VISUALIZED BY HIGH-SPEED TRANSMISSION ELECTRON MICROSCOPY**, T. Nink, Z. Mao, O. Bostanjoglo, Optisches Institut, TU Berlin, Strasse des 17. Juni 135, 10623 Berlin, Germany
- G-II/P19 **VUV LASER ABLATION OF POLYMERS AT 157 NM AND APPLICATIONS FOR 3D PROCESSING**, M. Lapczyna, M. Stuke, MPI f. biophys. Chemie, P.O. Box 2841, 37018 Göttingen, Germany
- G-II/P20 **FOCUSSED ION BEAM INDUCED NANOSCALE MODIFICATION OF 3D MICROSTRUCTURES**, A. Schertel*, R. Kassing**, M. Stuke, Max-Planck-Institut f. biophys. Chemie, P. O. Box 2841, 37018 Göttingen, *Micrion, **Univ. Kassel, Germany
- G-II/P21 **RELATIVISTIC MAXWELLIAN ELECTRONS EMITTED AFTER SURFACE IRRADIATION WITH ULTRA SHORT LASER PULSES**, J. Marciak-Rozłowska, Institute of Electron Technology, Al. Lotnikow 32/46, 02-668 Warsaw, Poland
- G-II/P22 **THE USE OF LIQUID PRECURSORS IN PLASMACHEMICAL TECHNOLOGY OF OBTAINING a-SiC:H THIN FILMS**, L. Ivashchenko, G. Rusakov, V. Ivashchenko, Institute of Problems of Material Sciences, Ukraine NAS, Dep.4., Krzhizhanovsky Str.3, 252680 Kyiv, Ukraine
- G-II/P23 **ELLIPSOMETRIC STUDIES OF RAPIDLY-QUENCHED Fe-Cr-B RIBBONS SUBJECTED TO LASER TREATMENT**, M. Zakharenko, I. Yurgelevych, L. Poperenko, Taras Shevchenko University, 64 Volodymyrska st., 252033 Kyiv, Ukraine
- G-II/P24 **OPTICAL CHARACTERIZATION OF THE PLASMA PROCESSED METALLIC SURFACES**, L.V. Poperenko, M.V. Vinnichenko, Taras Shevchenko Univ., prosp. Glushkov 6, 252022 Kyiv, Ukraine; A. Roeseler, ISAS - LSMU, Rudower Chaussee 5, 12489 Berlin, Germany
- G-II/P25 **DEPOSITION OF NANOPHASE Cr₂O₃ UNDER LASER IRRADIATION OF SOLID-LIQUID INTERFACE**, S.I. Dolgaev, N.A. Kirichenko, and G.A. Shafeev, General Physics Institute, Russian Academy of Sciences, 38 Vavilov street, Moscow 117942, Russia
- G-II/P26 **ELECTROLESS Cu DEPOSITION ON LASER-ABLATED POLYIMIDE SURFACE**, G.A. Shafeev, E.N. Loubnin*, and P. Hoffmann**, General Physics Institute, Russian Academy of Sciences, 38 Vavilov street, Moscow 117942, Russia; *Institute of Physical Chemistry, Russian Academy of Sciences, 31 Leninsky Prospect, Moscow 117915, Russia; **Swiss Federal Institute of Technology, Department of Microtechnique, Institute of Applied Optics, Lausanne 1015, Switzerland
- G-II/P27 **LASER WRITING OF GLASSY CARBON FEATURES ON Si FROM LIQUID TOLUENE**, G.A. Shafeev, A.V. Simakin, A.A. Lyulin, E.D. Obraztsova, and V.D. Frolov, General Physics Institute of the Russian Academy of Sciences, 38 Vavilov street, 117942 Moscow, Russia
- G-II/P28 **FILMS OF HgCdTe FORMED ON TWO KINDS OF Si SURFACES**, M. Kuzma, G. Wisz, E. Sheregii, Institute of Physics, Higher Pedagogical School, Rejtana 16a, 35-309 Rzeszow, Poland; T.Ya. Gorbach, P.S. Smertenko, S.V. Svechnikov, Institute of Semiconductor Physics, National Ukrainian Academy of Sciences, Prospect Nauki 45, Kiev 28, 252630 Ukraine
- G-II/P29 **EMPLOYMENT OF A SELECTIVE ETCHING METHOD TO CORRECT TECHNOLOGICAL PROCESSES**, TE. Rusak, K.L. Enisherlova, SRI „Pulsar“, Moscow, Russia and G.N. Petrov, MASHINOEXPORT, Moscow, Russia
- G-II/P30 **THE USE OF LIQUID PRECURSORS IN PLASMACHEMICAL TECHNOLOGY OF OBTAINING a-SiC:H THIN FILMS**, L. Ivashchenko, G. Rusakov, V. Ivashchenko, Institute of Problems of Material Sciences, Ukraine NAS, Dep.4, 252680 Kyiv, Krzhizhanovsky Str.3, Ukraine
- G-II/P31 **LASER IMPLANTATION OF MOLECULAR AGGREGATES INTO POLY (METHYL METHACRYLATE)**, Masahiro Goto, Nobuyuki Ichinose, Shunichi Kawanishi, Japan Atomic Energy Research Institute, 25-1, Mi-Minami-Machi, Neyagawa, Osaka 572, Japan and Hiroshi Fukumura, Osaka University, Suita, Osaka 565, Japan
- G-II/P32 **PHASE COMPOSITION OF CR-C THIN FILMS DEPOSITED BY DOUBLE UNBALANCED MAGNETRON SPUTTERING SYSTEM**, S. Groudeva-Zotova, IE-BAS, Tzarigradsko Chausse 72, 1784 Sofia, Bulgaria, R.Vitchev and J. Helsen, Universiteit Leuven, 3001 Leuven, Belgium

SYMPOSIUM G

- G-II/P33 THERMAL BEHAVIOUR OF Co/Si/W/Si MULTILAYERS UNDER HIGH INTENSITY EXCIMER LASER PULSES, E. Majkova, S. Luby, M. Jergel, Slovak Acad. Sci., 8342 28 Bratislava Slovak Republic, A. Luches and M. Martino, University of Lecce, 73100 Lecce, Italy, P. Mengucci, G. Majni, University of Ancona, Italy
- G-II/P34 EXITED GAS-INDUCED CVD OF DIELECTRIC FILMS FROM MOLECULAR PRECURSORS, T.P. Smirnova, L.V. Yakovkina, Institute of Inorganic Chemistry, Russian Academy of Sciences, Siberian Dpt., Lavrentjev Ave 3, Novosibirsk, Russia
- G-II/P35 SYNTHESIS OF OXIDE-CERAMIC AT MAGNESIUM AND ZIRCONIUM ALLOYS, H.M. Nykyforchyn, M.D. Klaphiv, V.M. Posuvaylo, Karpenko Physico-Mechanical Institute of NAS of Ukraine, 5 Naukova St., 290601 Lviv, Ukraine
- G-II/P36 LASER INDUCED DEFORMATION ON HARD DISK SURFACE, D.M. Liu, Y.F. Lu, W.J. Wang, K.T. Chang, R.J.K. Goh and T.S. Low, Laser Research (Singapore) Pte Ltd and Data Storage Institute, 10 Kent Ridge Crescent Singapore, 119260
- G-II/P37 EFFECTS OF SURFACE OXIDE DENSIFICATION ON RIPPLE GROWTH IN EXCIMER LASER IRRADIATED SILICON SUBSTRATES, Y.F. Lu and J.L. Yu, Laser Microprocessing Laboratory, Department of Electrical Engineering and Data Storage Institute, National University of Singapore, 10 Kent Ridge Crescent, Singapore 119260
- G-II/P38 LASER-INDUCED RIPPLE STRUCTURES ON Ni-P SUBSTRATES, J.L. Yu and Y.F. Lu, Laser Microprocessing Laboratory, Department of Electrical Engineering and Data Storage Institute, National University of Singapore, 10 Kent Ridge Crescent, Singapore 119260
- G-II/P39 FAST ICCD IMAGING OF KRF EXCIMER LASER INDUCED TI PLASMA PLUMES FOR Si METALLIZATION, M.H. Hong, Y.F. Lu, T.M. Ho, L.W. Lu and T.S. Low, Laser Microprocessing Laboratory, Department of Electrical Engineering and Data Storage Institute, National University of Singapore, 10 Kent Ridge Crescent Singapore 119260
- G-II/P40 MINIMUM SIZES OF PARTICLES REMOVED BY LASER IRRADIATION, W.D. Song and Y.F. Lu, Laser Microprocessing Laboratory, Department of Electrical Engineering and Data Storage Institute, National University of Singapore, 10 Kent Ridge Crescent, Singapore 119260
- G-II/P41 STUDY OF PULSED-LASER-INDUCED ALUMINUM PLASMA SPECTRA, Y.F. Lu, Z.B. Tao, M.H. Hong, D.S.H. Chan and T.S. Low, Laser Microprocessing Lab, Department of Electrical Engineering and Data Storage Institute, National University of Singapore, 10 Kent Ridge Crescent, Singapore 119260
- G-II/P42 DEPOSITION OF BY ION-BEAM-ASSISTED EXCIMER ABLATION OF GRAPHITE, Z.M. Ren, Y.F. Lu, H.Q. Ni, D.S.H. Chan, and T.S. Low, Laser Microprocessing Laboratory, Department of Electrical Engineering and Data Storage Institute, National University of Singapore, 10 Kent Ridge Crescent, Singapore 119260
- G-II/P43 CARBON NITRIDE THIN FILMS DEPOSITED BY KrF EXCIMER ABLATION OF GRAPHITE IN NITROGEN ATMOSPHERE, Z.M. Ren, Y.F. Lu, H.Q. Ni, D.S.H. Chan and T.S. Low, Laser Microprocessing Laboratory, Department of Electrical Engineering and Data Storage Institute, National University of Singapore, 10 Kent Ridge Crescent, Singapore 119260

SYMPOSIUM G

Thursday June 18, 1998

Jeudi 18 juin 1998

Afternoon

Après-Midi

Poster Session III

17:30-19:00

- G-III/P1 FEMTOSECOND AND NANOSECOND PULSE-LASER MATERIALPROCESSING IMAGED BY TIME RESOLVED PHOTOELECTRON MICROSCOPY, M. Weingärtner, R. Elschner, O. Bostanjoglo, Optisches Institut, TU-Berlin, Strasse des 17. Juni, 10623 Berlin, Germany
- G-III/P2 ION BEAM ANALYSIS OF PULSED LASER DEPOSITED Ti: SAPPHIRE, P.H. Key and M.J.J. Schmidt*, Department of Applied Physics, The University of Hull, Hull, HU6 7RX, UK; * now at: Manufacturing Division, Department of Mechanical Engineering, University of Manchester Institute of Science and Technology (UMIST), PO Box 88, Manchester, M60 1QD, UK
- G-III/P3 STUDY OF THE DIFFERENT PULSED LASER HEATING REGIMS OF METALS, L. Vivet, J. Arnoult, T. Legrand, GREMI, Université d'Orléans/C.N.R.S., 45067 Orléans cedex 2, France
- G-III/P4 STUDY OF PARTICLES EJECTED AFTER PULSED LASER ABLATION OF A GRAPHITE TARGET, B. Angleraud, F. Garrelie, F. Tétard, A. Catherinot, LMCTS UPRESA CNRS n°6015, 123 av. A. Thomas, 87060 Limoges cedex, France
- G-III/P5 LASER-INDUCED DESORPTION OF VARIOUS TUNGSTEN OXIDES ON POLYCRYSTALLINE W SURFACES, Cs. Beleznaï*, D. Vouagner*, J.P. Girardeau-Montaut* and L. Nanai**, *Laboratoire de Sciences et Ingénierie des Surfaces (EA 1877), Université Claude Bernard - Lyon 1, 43, Bd. du 11 Novembre 1918, 69622 Villeurbanne Cedex, France; ** Department of Experimental Physics, Jozsef Attila University, 6720 Szeged, Dom t. 9., Hungary
- G-III/P6 CHARACTERIZATION OF THE OXIDE REMOVAL KINETICS ON K⁺-IMPLANTED W SAMPLES, D. Vouagner*, Cs. Beleznaï** and J.P. Girardeau-Montaut*, *Laboratoire de Sciences et Ingénierie des Surfaces (EA 1877), Université Claude Bernard - Lyon 1, 43 Bd. du 11 Novembre 1918, 69622 Villeurbanne Cedex, France; **also at the Department of Experimental Physics, Jozsef Attila University, 6720 Szeged, Dom t. 9., Hungary
- G-III/P7 EXCIMER LASER ABLATION STUDIES OF TITANIUM, P. Clarke, P.H. Key and P.E. Dyer, Department of Physics, University of Hull, HU6 7RX, UK
- G-III/P8 A TWO STEPS REACTIVE PULSED DEPOSITION OF HYDROXYAPATITE COATINGS ON METAL SUBSTRATES, V. Nelea, A. Cornet, ENSAIS, 24 Bd. de la Victoire, 67084 Strasbourg Cedex, France; C. Ghica, J. Werckmann, IPCMS-CNRS, 23 Rue du Loess, 67000 Strasbourg, France; C. Martin, I.N. Mihailescu, INFLPR, PO Box MG-36, 76900 Bucharest, Romania
- G-III/P9 REACTIVE PULSED LASER ABLATION AND DEPOSITION OF THIN ITO FILMS FOR SOLID STATE COMPACT SENSORS, T.M. Di Palma, A. Giardini Guidoni, Dipartimento di Chimica, Università «La Sapienza», Ple A. More 5, 00185 Roma, Italy; V. Marotta, Istituto Materiali Speciali CNR, via S. Loja, Tito Scalo (Pz), Italy; R. Teghil, Dipartimento di Chimica, Università di Basilicata, via N. Sauro 85, 85100 Potenza, Italy
- G-III/P10 PULSED LASER ABLATION AND DEPOSITION OF BIOACTIVE GLASS AS COATING MATERIAL FOR BIOMEDICAL APPLICATIONS, L. D'Alessio, R. Teghil, M. Zaccagnino, I. Zaccardo, Dipartimento di Chimica, Università della Basilicata, via N. Sauro 85, 85100 Potenza, Italy; D. Ferro, CNR Centro di Termodinamica Chimica alle Alte Temperature, Ple A. More 5, 00185 Roma, Italy; V. Marotta, CNR Istituto Materiali Speciali, via S. Loja, Tito Scalo (Pz), Italy
- G-III/P11 ON THE GROWTH OF LiF FILMS BY PULSED LASER DEPOSITION, A. Perea, J. Gonzalo, C.N. Afonso, Instituto de Optica (CSIC), Serrano 121, 28006 Madrid, Spain and S. Martelli, R.M. Montereali, ENEA, C.R. Frascati, C.P. 65, 00044 Frascati, Italy
- G-III/P12 CHARACTERISATION OF MODIFICATIONS OBSERVED ON NITRIDES AFTER AN UV LASER EXPOSURE, G. Nicolas, Escuela Politecnica Superior, Universidad de La Coruna, C/ Mendizabal s/n, 15403 Ferrol, Spain; G. Vacquier, Université de Provence, Laboratoire de Physico-Chimie des Matériaux, 3 Place V. Hugo, 13331 Marseille Cedex 3, France; L. Yaghdjian, M. Autric, IRPHE, Laboratoire LP3, 163 Av. de Luminy, 13009 Marseille, France
- G-III/P13 DEPOSITION OF SiC AND AlN THIN FILMS BY LASER ABLATION AND SURFACE ACTIVATION, J. Meinschien, F. Falk, H. Stafast, Institut für Physikalische Hochtechnologie, Helmholtzweg 4, 07743 Jena, Germany
- G-III/P14 LASER DEPOSITION OF YBaCuO THIN FILMS -STRESS MEASUREMENTS AND MICROSTRUCTURE INVESTIGATIONS, R.J. Gaboriaud and F. Pailloux, Université de Poitiers, Laboratoire de Métallurgie Physique UMR 6630, CNRS, SP2MI, Bd 3, téléport 2, BP 179, 86960 Futuroscope cedex, France

SYMPOSIUM G

- G-III/P15 AN XPS AND XRD STUDY OF PHYSICAL AND CHEMICAL HOMOGENEITY OF $\text{Pb}(\text{Zr}, \text{Ti})\text{O}_3$ THIN FILMS OBTAINED BY PULSED LASER DEPOSITION, P. Verardi, F. Craciun, M. Dinescu*, L. Mirenghi**, V. Sandu*, CNR Istituto di Acustica «O.M. Corbino», Area di Ricerca Roma-Tor Vergata, Rome, Italy, *Institute of Atomic Physics, Bucharest, Romania, **PASTIS-CNRS, Brindisi, Italy
- G-III/P16 ELECTROLESS METALLIZATION OF CARBON FILMS, E. Touchais-Papet, M. Charbonnier, M. Romand, Laboratoire de Sciences et Ingénierie des Surfaces, Université Claude Bernard-Lyon 1, 43 Bd du 1 Novembre 1918, 69622 Villeurbanne Cedex, France
- G-III/P17 ENHANCED MAGNETORESISTANCE BEHAVIOUR IN CeO_2 BUFFERED LaCaMnO ON Si GROWN BY PULSED LASER DEPOSITION, W. Zhang, X. Wang*, I.W. Boyd, M. Elliott** and W. Herrenden-Harkerand**, Department of Electronic & Electrical Engineering, University College London, Torrington Place, London WC1E 7JE, UK; *School of Electrical Engineering and Information, South Bank University, 109 Borough Road, London SE1 6UH, UK; **Department of Physics and Astronomy, University of Wales, Cardiff College, Cardiff CF2 3YB, UK
- G-III/P18 PREPARATION DEPENDENCE OF THE MAGNETIC BEHAVIOUR IN La-Ca-Mn-O FILMS, W. Zhang and I.W. Boyd, Department of Electronic & Electrical Engineering, University College London, Torrington Place, London WC1E 7JE, UK; M. Elliott and W. Herrenden-Harkerand, Department of Physics and Astronomy, University of Wales, Cardiff, Cardiff CF2 3YB, UK
- G-III/P19 DUAL BEAM PULSED LASER DEPOSITION OF CRYOLITE THIN FILMS, L. Lambert, M. Autric, IRPHE-LP3, Marseille, France; W. Marine, GPEC, Marseille, France and F. Grangeon, EPFL-CRPP, Lausanne, Switzerland
- G-III/P20 FUNDAMENTAL MECHANISMS IN LASER-INDUCED ABLATION OF METALS: DEFECT INITIATED BOND BREAKING, E. Stietz, M. Stuke*, J. Viereck, T. Wenzel and F. Träger, Fachbereich Physik, Universität Kassel, Heinrich-Platt-Str. 40, 34132 Kassel, Germany; *Max-Planck-Institut für biophysikalische Chemie, P.O. Box 2841, 37018 Göttingen, Germany
- G-III/P21 THE FORMATION OF ALTERED LAYER DURING THE ION ETCHING OF Al_2B_3 , A. Grigonis, A. Galdikas, M. Silinskas, Physics Department, Kaunas University of Technology, Studentu 50, 3031 Kaunas, Lithuania
- G-III/P22 PHOTOCHEMICAL CROSSLINKING OF POLYDIAETHYLSILOXANES, S. Lurgarev and V. Denisov, Kemerovo State University, Krasnaya street 6, 650043 Kemerovo, Russia
- G-III/P23 PLASMA ANALYSIS IN THE PROCESS OF REACTIVE LASER ABLATION FOR NANOSIZE AlN SYNTHESIS, I. Apostol, C. Grigoriu, D. Dragulinescu, C. Luculescu, S. Udrea, National Institute for Laser, Plasma and Radiation Physics, PO Box MG 36, 76900 Bucharest, Romania
- G-III/P24 OXIDATION PROCESS IMPROVEMENT IN PULSED LASER DEPOSITION OF THIN FILMS, I. Apostol, R. Stoian, C. Luculescu, R. Dabu, A. Stratan, S. Udrea, National Institute for Laser, Plasma and Radiation Physics, Laser Dept., PO Box MG 36, 76900, Bucharest, Romania
- G-III/P25 ULTRASONIC INVESTIGATION OF PULSED LASER INTERACTION WITH SOLID TARGETS, I. Apostol, R. Stoian, S. Ersen, R. Dabu, A. Stratan, National Institute for Laser, Plasma and Radiation Physics, Laser Dept, PO Box MG 36, 76900, Bucharest, Romania; A. Serbanescu Oasa, Technical University, Sibiu
- G-III/P26 ELECTROCHEMICAL DISSOLUTION AND DEPOSITION OF DOPED p- AND n-SILICON IN ANHYDROUS ORGANIC SOLUTIONS, J. Banal and U. Lelek-Borkowska, University of Mining and Metallurgy, Faculty of Foundry Eng., Dep. of General and Anal. Chem., ul. Reymonta 23, 30-059 Cracow, Poland
- G-III/P27 VACUUM ULTRAVIOLET ANNEALING OF THIN FILMS GROWN BY PULSED LASER DEPOSITION, V. Craciun and D. Craciun, Laser Dept, NILPRP, Bucharest V, Romania; P. Andreazza, CRMD, University of Orleans, Orleans, France; J. Perriere, GPS, Université Paris VII, Paris, France; I.W. Boyd, Department of Electronic and Electrical Engineering, UCL, Torrington Place, London WC1E 7JE, UK
- G-III/P28 GROWTH OF THIN TRANSPARENT TITANIUM NITRIDE LAYERS BY REACTIVE LASER ABLATION, V. Craciun, D. Craciun, Laser Dept, NILPRP, Bucharest, Romania; C. Ghica, L. Trupina, NIMP, Bucharest, Romania; C. Fluieraru, N. Nastase, IMT, Bucharest, Romania
- G-III/P29 RF PLASMA TREATMENTS OF MACROMOLECULAR MEMBRANES, E. Aldea, G. Dinescu, B. Mitu, National Institute of Lasers Plasma and Radiation Physics, Atomistilor 1, MG 36, 76900 Magurele, Bucharest, Romania; G. Popescu, A. Bujor, D. Rată, Research Center for Membranes and Macromolecular Materials, Bucharest; M. Olteanu, Dept. of Chemistry, University of Bucharest, Romania
- G-III/P30 SOME PARTICULAR ASPECTS OF POLYSILICON GATE PLASMA ETCHING PROCESS IN CMOS TECHNOLOGIES, I. Cernica, C. Dunare, Liviu Bociocica, National Institute of Microtechnology, PO box. 38-160, Bucharest, Romania

SYMPOSIUM G

- G-III/P31 *ANALYSIS OF THICKNESS PROFILES OF PULSED LASER DEPOSITED METAL FILMS, Z. Kantor, T. Szörényi*, Z. Toth* and L. Gombos, Department of Optics and Quantum Electronics, Jozsef Attila University, *Research Group on Laser Physics of the Hungarian Academy of Sciences, POB 406, Szeged, 6701, Hungary*
- G-III/P32 *LASER SOLID-PHASE DOPING OF SEMICONDUCTORS FOR MICROELECTRONIC DEVICES FABRICATION, A. Yu. Bonchik, S.G. Kiyak, A.V. Pokhmurska, G.V. Savitskij, Institute for Applied Problems of Mechanics and Mathematics, 3 b Naukova Street, 290601, Lviv, Ukraine*
- G-III/P33 *SOI SPECIAL SENSITIVITY PHOTODETECTORS, L. Lytvyn, Scientific Research Centre TernoCENTR, 11 Lvivska st., TANE, 282004 Ternopil, Ukraine*
- G-III/P34 *EPITAXIAL GROWTH OF DIELECTRIC SrTiO_3 THIN FILMS BY PULSED LASER DEPOSITION, Tao Yu, Yan-Feng Chen, Zhi-Guo Liu and Nai-Ben Ming, National Laboratory of Solid State Microstructures, Nanjing University, Nanjing 210093, P.R.China*
- G-III/P35 *ACOUSTIC PROPERTY OF $\text{PbTiO}_3/\text{SrTiO}_3$ MULTILAYER STRUCTURES PREPARED BY MOCVD AND PLD METHODS, Tao Yu, Yan-Feng Chen, Zhi-Guo Liu and Nai-Ben Ming, National Laboratory of Solid State Microstructures, Nanjing University, Nanjing 210093, P.R.China*
- G-III/P36 *OXIDE LAYER GROWTH DYNAMICS INDUCED BY LASERS, L. Fabian*, K. Feher*, Cs. Beleznai*, R. Vajtai*, D. Vouagner** *Department of Experimental Physics, Jozsef Attila University, 6720 Szeged, Dom t. 9., Hungary; **Laboratoire de Sciences et Ingénierie des Surfaces (EA 1877), Université Claude Bernard-Lyon 1, 43 Bd. du 11 Novembre 1918, 69622 Villeurbanne Cedex, France*
- G-III/P37 *UV LASER-INDUCED ETCHING AND METAL SEEDING ON POLYMERS; A SURFACE CHARACTERIZATION, J. Békési, K. Kordas, Cs. Beleznai, K. Bali and L. Nanai, Department of Experimental Physics, Jozsef Attila University, 6720 Szeged, Dom t. 9., Hungary*
- G-III/P38 *PULSED LASER DEPOSITION OF LITHIUM NIOBATE. A PARAMETRIC STUDY, D. Ghica, A. Cavaleru, INOE, PO Box MG-22, 76900 Bucharest, Romania; C. Ghica, IPCMS-CNRS, 23 Rue de Loess, 67000 Strasbourg, France; V. Nelea, ENSAIS, 24 Bld. de la Victoire, 67084 Strasbourg Cedex, France; C. Martin, I.N. Mihailescu, INFILPR, PO Box MG-36, 76900 Bucharest, Romania*
- G-III/P39 *GENERATION OF DONOR CENTERS AT THE SURFACE OF p-InSb BY LASER RADIATION, A. Medvid', L. Fedorenko, Riga Technical University, la Kalku Str., Riga 1658, Latvia*
- G-III/P40 *EXCIMER LASER STRUCTURING OF NEW COMPOSITES MATERIALS, G.V. Danev, E.M. Spassova, J.J. Assa, I.D. Zenov, Bulgarian Academy of Science, 1113 Sofia, Bulgaria and J. Ihlemann, Laser-Laboratorium-Goettingen e.V., 37077 Goettingen, Germany*
- G-III/P41 *DISCHARGE CHARACTERISTICS OF THE DOUBLE CLOSED-DRIFT ION SOURCE, D.A. Kotov, I.V. Svadkovski, A.P. Dostanko, Belarussian State University of Informatics and Radioelectronics, P. Brovka Street 6, 220027 Minsk, Belarus*
- G-III/P42 *PARTIAL AMORPHISATION OF CoSi_2 THIN LAYER BY LASER QUENCHING, M. Knite, M. Ogrinsh, Riga Technical University, la Kalku str., Riga 1658, Latvia and V. Snitka, Kaunas University of Technology, 65, Studentu str., 3031 Kaunas, Lithuania*

E-MRS'98 SPRING MEETING



SYMPOSIUM H

Materials Aspects in Microsystem Technologies

Symposium Organizers

- | | |
|---------------------|-------------------------------------------------------------------|
| D. BARBIER | Laboratoire de Physique de la Matière, INSA, Villeurbanne, France |
| W. LANG | HSG-IMIT, Villingen-Schwenningen, Germany |
| J.R. MORANTE | Universitat de Barcelona, Barcelona, Spain |
| D. ESTEVE | LAAS, Toulouse, France |
| G. MUELLER | Daimler-Benz AG, München, Germany |

SYMPOSIUM H

Tuesday June 16, 1998
Mardi 16 juin 1998

Morning
Matin

SESSION I - Devices I

- H-I.1** 08:30-09:10 -Invited- *SILICON COMPATIBLE MATERIALS FOR HARSH-ENVIRONMENT SENSORS, G.H. Kroetz and M.H. Eickhoff, Daimler-Benz AG Research and Technology, Dep. FT2/M, Postbox 80 04 65, 81663 Munich, Germany*
- H-I.2** 09:10-09:30 *IMPROVED SILULATION FOR STRONGLY COUPLED MEMS: RESONANT VACUUM SENSOR OPTIMIZATION, B. Folkmer, A. Siber*, W. Große-Bley**, W. Lang, HSG-IMIT: Hahn-Schickard-Gesellschaft, Institut für Mikro- und Informationstechnik, W. Schickard-Str. 10, 78052 Villingen-Schwenningen, Germany; *Gesellschaft für Sensoren mbH, Villingen-Schwenningen, Germany; **Leybold Vakuum GmbH, Köln, Germany*
- H-I.3** 09:30-09:50 *OPTIMIZING PHOTODIODE ARRAYS FOR THE USE AS RETINAL IMPLANTS, M.B. Schubert, A. Hierzenberger, H.J. Lechner, J.H. Werner, Universität Stuttgart, Institut für Physikalische Elektronik, Pfaffenwaldring 47, 70569 Stuttgart, Germany*
- H-I.4** 09:50-10:10 *MICROSTRUCTURES OF THE MONOMORPH PIEZO-ELECTRIC CERAMIC ACTUATORS WITH FUNCTIONAL GRADIENTS, Xinhua Zhu, Jianming Zhu, Shunhua Zhu, Qi Li and Zhiguo Liu, National Laboratory of Solid State Microstructures, Nanjing University, Nanjing 210093, China*

10:10-10:50

BREAK

SESSION II - Devices II

- H-II.1** 10:50-11:10 *MICROMACHINED SWITCHING CONTACTS FOR LOW ELECTRIC LOADS, K. Hiltmann, W. Keller, and W. Lang, HSG-IMIT: Hahn-Schickard-Gesellschaft, Institut für Mikro- und Informationstechnik, Wilhelm-Schickard-Str. 10, 78052 Villingen-Schwenningen, Germany*
- H-II.2** 11:10-11:30 *MICROMACHINED CHEMICAL REACTION SYSTEM, M. Koch, C.G.J. Schabmueller, A.G.R. Evans, A. Brunnschweiler, Department of Electronics and Computer Science, University of Southampton, Southampton SO17 1BJ, UK*
- H-II.3** 11:30-11:50 *INTEGRATED ACTUATOR, C. Rossi, D. Estève, LAAS-CNRS, 7 ave. du colonel Roche, 31077 Toulouse cedex 4, France*
- H-II.4** 11:50-12:10 *ELECTROSTATICALLY ACTUATED MICROMIRROR DEVICES IN SILICON TECHNOLOGY, W. Lang, H. Pavlicek, Th. Marx, H. Scheithauer, B. Schmidt, HSG-IMIT, Hahn-Schickard-Gesellschaft, Institut für Mikro- und Informationstechnik, Wilhelm-Schickard-Str. 10, 78052 Villingen-Schwenningen, Germany*

12:10-14:00

LUNCH

SYMPOSIUM H

Tuesday June 16, 1998

Mardi 16 juin 1998

Afternoon

Après-midi

SESSION III - Characterization

- H-III.1 14:00-14:40 -Invited- EVALUATION OF MECHANICAL MATERIALS PROPERTIES BY MEANS OF SURFACE MICROMACHINED STRUCTURES, J.Å. Schweitz and F. Ericson, Uppsala University, The Ångström Laboratory, Department of Materials Science, Box 534, 751 21 Uppsala, Sweden
- H-III.2 14:40-15:00 DETERMINATION OF MICROMECHANICAL PROPERTIES OF THIN FILMS BY BEAM BENDING MEASUREMENTS WITH AN ATOMIC FORCE MICROSCOPE, C. Serre, A. Pérez-Rodríguez, J.R. Morante, Dept. Electrónica, Universitat de Barcelona, Spain, P. Gorostiza, Serveis Científico-Tècnics, Universitat de Barcelona, Spain, J. Esteve, CNM-CSIC, Campus UAB, Bellaterra, Spain
- H-III.3 15:00-15:20 EFFECT OF SURFACE STRUCTURING ON ADHERENCE OF ANIMAL CELLS ON SILICON, S.C. Bayliss, L.D. Buckberry, P.J. Harris, I. Fletcher, *M. Tobin, Solid State Research Centre, De Montfort University, Leicester LE1 9BH, UK, *Daresbury Laboratory SRS, Warrington WA4 4AD, UK
- H-III.4 15:20-15:40 CHARACTERIZATION AND MODELING OF A CMOS COMPATIBLE MEMS TECHNOLOGY, L. Latorre, P. Nouet, Y. Bertrand, LIRMM, Montpellier, France; P. Hazard, Schneider Electric, Nanterre, France and F. Pressecq, CNES, Quality Assurance Delegation, Toulouse, France
- H-III.5 15:40-16:00 DYNAMIC DETERMINATION OF YOUNG'S MODULUS OF ELECTRO-PLATED NICKEL USED IN LIGA TECHNIQUE, H. Majjad, LMARC & LPMO, S. Basrour, LPMO, 32 av. de l'Observatoire 25044 Besançon, France, P. Delobelle LMARC, 24 rue de l'Épithaphe 25000 Besançon, France

16:00-16:40

BREAK

SESSION IV - Porous Silicon I

- H-IV.1 16:40-17:00 THICK OXIDISED POROUS SILICON LAYERS FOR DESIGN OF A BIO-MEDICAL THERMAL CONDUCTIVITY MICROSENSOR, V. Lysenko, Ph. Roussel, B. Remaki, G. Delhomme, A. Dittmar, D. Barbier, Laboratoire de Physique de la Matière, INSA de Lyon, CNRS UMR 5511, Av. Albert Einstein, Bât. 502, 69621 Villeurbanne Cedex, France
- H-IV.2 17:00-17:20 POROUS SILICON TECHNIQUE FOR REALIZATION OF SURFACE MICRO MACHINED SILICON STRUCTURES WITH LARGE SUBSTRATE GAP, H. Artmann, Robert Bosch GmbH, Department FV/FLD, P.O.Box 10 60 50, 70049 Stuttgart, Germany
- H-IV.3 17:20-17:40 SINGLE STEP ELECTROCHEMICAL ETCHING IN AMMONIUM FLUORIDE, H. Ohji and P.J. French, Delft University of Technology, Postbus 5031, 2600 GA Delft, The Netherlands
- H-IV.4 17:40-18:00 BREAKING THE ISOTROPY OF POROUS SILICON FORMATION BY ELECTRICAL FIELD-GUIDANCE, A. Zeitschel, A. Friedberger, W. Welsch, G. Müller, Daimler Benz AG, Forschung und Technologie FT2/M, PO Box 80 04 65, 81663 Munich, Germany

SYMPOSIUM H

Wednesday June 17, 1998
Mercredi 17 juin 1998

Afternoon
Après-midi

POSTER SESSION I

14:00-16:00 See programme of this poster session p. H-8 to p. H-9.

16:00-16:20 BREAK

SESSION V - Biological and Chemical Devices

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|--------------|--------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| H-V.1 | <i>16:20-17:00</i> | <i>-Invited-</i> | MICROSTRUCTURING OF ORGANIC LAYERS FOR MICROSYSTEMS ,
G. Urban, <i>Albert-Ludwigs-University Freiburg, Am Flugplatz, 79085 Freiburg, Germany</i> |
| H-V.2 | <i>17:00-17:20</i> | | INTEGRATION OF A SENSITIVE MATERIAL TO A SILICON BASED DEVICE FOR CO DETECTION , <u>Q. Renault</u> , D. Briand, G. Delabougliise, J.F. Currie* and M. Labeau, <i>LMGP/INPG, BP46, 38402 Saint Martin d'Hères, France, and *LISA/EPM, P.O. Box 6079, Montréal, H3C3A7, Canada</i> |
| H-V.3 | <i>17:20-17:40</i> | | OZONE DETECTION USING LOW-POWER-CONSUMPTION METAL-OXIDE GAS SENSORS , <u>Th. Becker</u> , L. Tomasi, Chr. Bosch-v.Braunmühl, G. Müller, <i>Daimler Benz AG, Forschung und Technologie FT2/M, PO Box 80 04 65, 81663 Munich, Germany</i> ; G. Sberveglieri, G. Faglia, E. Comini, <i>Dept. of Chemistry and Physics of Materials, University of Brescia, Brescia, Italy</i> |
| H-V.4 | <i>17:40-18:00</i> | | INVESTIGATION OF THE MIS GAS-SENSITIVE STRUCTURES WITH Pd AND Pd/Cu METAL LAYERS , V.G. Litovchenko, T.I. Gorbanyuk, A.A. Efremov, <u>A.A. Evthukh</u> , I.P. Lisovskii, <i>Institute of Semiconductor Physics, 45 Prospekt Nauki, Kiev 252650, Ukraine</i> |

SYMPOSIUM H

Thursday June 18, 1998
Jeudi 18 juin 1998

Morning
Matin

SESSION VI - Deposition and Preparation

- H-VI.1 08:30-08:50 *PHOTOPOLYMERIZATION BY EVANESCENT WAVES: A NEW METHOD TO OBTAIN NANOMETRIC FILMS OF PHOTOPOLYMER, A. Espanet, C. Ecoffet and D.J. Lounnot Laboratoire de Photochimie Générale, CNRS-UMR7525, 3 rue Alfred Werner, 68093 Mulhouse, France*
- H-VI.2 08:50-09:10 *PERMALLOY ELECTROPLATING THROUGH LITHOGRAPHIC MASK, J.M. Quemper, S. Nicolas, J.P. Gilles, J.P. Grandchamp, A. Bosseboeuf, T. Bourouina, E. Dufour-Gergam, Institut d'Electronique Fondamentale, Bât 220, 91405 Orsay, France*
- H-VI.3 09:10-09:30 *MICROMACHING OF AN AIR-BRIDGE STRUCTURE USING THIN-FILMS ON GLASS SUBSTRATES, M. Boucinha, V. Chu, INESC, Lisboa, Portugal, and J.P. Conde, Department of Materials Engineering, Instituto Superior Técnico, Lisboa, Portugal*
- H-VI.4 09:30-09:50 *FORMULATION OF STABLE SILVER-ON-POLYIMIDE INTERFACE BY CHEMICAL METALLIZATION, A. Syzdykova, S. Kudaikulova, G. Boiko, B. Zhubanov, M. Buranbaev*, G. Atanbekova*, K. Zhumanov*, Institute of Chemical Sciences, 106 Valihanov, Alma-Ata, Kazakstan, *Physical Department of Kazak State University, 96 Tolebi, Alma-Ata, Kazakstan*
- H-VI.5 09:50-10:10 *PECVD SILICON OXYNITRIDE OPTIMIZED FOR APPLICATION IN INTEGRATED OPTICS, K. Würhoff, A. Driessen, P.V. Lambeck, H. Albers, L.T.H. Hilderink, and Th.J.A. Popma, MESA Research Laboratory, University of Twente, P.O.Box 217, 7500 AE Enschede, The Netherlands*

10:10-10:50

BREAK

SESSION VII - Etching

- H-VII.1 10:50-11:10 *RECENT ADVANCES IN SI ETCHING FOR MEMS USING THE ASE+ PROCESS, H. Ashraf, J.K. Bhardwaj, J. Hopkins, A.M. Hynes, I. Johnston, J.N. Shepherd, Surface Technology Systems Ltd, Imperial Park, Newport, NP1 9UJ, UK*
- H-VII.2 11:10-11:30 *ROUGHENING AND SMOOTHING DYNAMICS DURING KOH SILICON ETCHING, R. Divan, N. Moldovan, Institute of Microtechnology Bucharest, PO Box 38-160, Romania and H. Camon, LAAS/CNRS 7 Avenue du Colonel-Roche, 31077 Toulouse Cedex, France*
- H-VII.3 11:30-11:50 *3D ELECTROFORMING OR ETCHING USING UV GRAY-TONE LITHOGRAPHY, S. Nicolas, J.M. Quemper, E. Dufour-Gergam, J.P. Gilles, A. Bosseboeuf, T. Bourouina, J.P. Grandchamp, Institut d'Electronique Fondamentale, Bât 220 91405 Orsay cedex, France*
- H-VII.4 11:50-12:10 *SILICON ELASTOMER AS PROTECTIVE LAYER IN 3D MICROFABRICATION OF MOEMS, P. Obreja, R. Muller, E. Manea, National Institute for Research and Development in Microtechnologies, PO Box.36-160, 72225 Bucharest, Romania*

12:10-14:00

LUNCH

SYMPOSIUM H

Thursday June 18, 1998
Jeudi 18 juin 1998

Afternoon
Après-Midi

SESSION VIII - Bonding and Packaging

- H-VIII.1 14:00-14:40 *WAFER BONDING FOR MICROSYSTEMS TECHNOLOGIES*, U. Goesele, A. Schumacher, G. Kraeuter, K. Gutjahr, M. Reiche, A. Ploessl, and P. Kopperschmidt, Max Planck Institute of Microstructure Physics, Weinberg 2, 06120 Halle, Germany and Q.Y. Tong, T.H. Lee, Y.L. Chao, L.J. Huang, and W.J. Kim, Wafer Bonding Laboratory, School of Engineering, Duke University, Durham NC 27708, USA
- H-VIII.2 14:40-15:00 *b-SiC ON SiO₂ FORMED BY ION IMPLANTATION AND BONDING FOR MICROMECHANICS APPLICATIONS*, C. Serre, A. Romano-Rodriguez, A. Pérez-Rodriguez, J.R. Morante, Dept. d'Electrònica Universitat de Barcelona, Spain; L. Fonseca, J.A. Plaza, M.C. Acero, CNM-CSIC, Campus UAB, Bellaterra, Spain
- H-VIII.3 15:00-15:20 *EFFECT OF CLAMPING CONDITIONS AND BUILT-IN STRESSES ON THE THERMOPNEUMATIC DEFLECTION OF SiO₂/Si MEMBRANES WITH VARIOUS GEOMETRIES*, C. Malhaire, M. Le Berre, D. Febvre, D. Barbier, P. Pinard, LPM-UMR C55 II, INSA Lyon, 20 av. Einstein, bât. 502, 69621 Villeurbanne Cedex, France
- H-VIII.4 15:20-15:40 *SELECTION OF MATERIALS FOR REDUCED STRESS PACKAGING OF A MICROSYSTEM*, A. Morrissey and J. Alderman, National Microelectronics Research Centre, University College, Cork, Ireland

15:40-16:20

BREAK

SESSION IX - Laser Processing

- H-IX.1 16:20-16:40 *MULTILAYERSTRUCTURES DEPOSITED BY LASER ABLATION*, D. Ghica*, C. Stanciu, V. Sandu**, M. Dinescu, IFA, NILPRD, PO Box MG-16, 76 900, Bucharest, Romania, *Institute of Optoelectronics, 76 900, Bucharest, Romania, **NIMP, PO Box MG-26, 76 900, Bucharest, Romania, and M. Balucani, V. Bondarenko, L. Franchina, G. Lamedica, and A. Ferrari, INFN Unit E6, University 'La Sapienza', Rome, Italy
- H-IX.2 16:40-17:00 *FEMTOSECOND LASER BASED TECHNOLOGY FOR FAST DEVELOPMENT OF MICROMECHANICAL DEVICES*, R. Bähnisch, W. Groß and A. Menschig; Deutsches Zentrum für Luft- und Raumfahrt (DLR), Institut für Technische Physik, Pfaffenwaldring 38-40, 70569 Stuttgart, Germany
- H-IX.3 17:00-17:20 *GROWTH OF PIEZOELECTRIC THIN FILMS WITH FINE GRAIN MICROSTRUCTURE BY HIGH ENERGY PULSED LASER DEPOSITION*, F. Craciun, P. Verardi, M. Dinescu*, C. Galassi**, A. Costa**, CNR Istituto di Acustica "O.M. Corbino", Area di Ricerca Roma - Tor Vergata, Roma, Italy; *Institute of Atomic Physics, Bucharest, Romania, **CNR Istituto di Recerche Tecnologiche per la Ceramica, Faenza, Italy
- H-IX.4 17:20-17:40 *PULSED LASER DEPOSITION OF MULTILAYER TiN/Pb (Zr, Ti)O₃ FOR PIEZOELECTRIC MICRODEVICES*, P. Verardi, M. Dinescu*, F. Craciun, R. Dinu*, C. Gerardi**, CNR Istituto di Acustica "O.M. Corbino", Area di Ricerca Roma - Tor Vergata, Roma, Italy; *Institute of Atomic Physics, Bucharest, Romania, **PASTIS-CNRSM, Brindisi, Italy
- H-IX.5 17:40-18:00 *MICROMACHINING OF MAGNETIC MATERIALS*, A. Kruusing*, **, S. Leppävuori**, A. Unsikäki** and B. Petretis***, *Tallinn Technical University, Ehitajate tee 5, 0026, Tallinn, Estonia, **Microelectronics and Material Physics Laboratories, EMPART research group of Infotech Oulu, University of Oulu, P.O.Box 444, 90570 Oulu, Finland, *** Institute of Physics, Savanorio 231, 2028 Vilnius, Lithuania

SYMPOSIUM H

Friday June 19, 1998
Vendredi 19 juin 1998

Morning
Matin

SESSION X - New Materials

- H-X.1 08:30-08:50 *PROPERTIES OF SiO_2/N_2 FILMS DEPOSITED BY LPCVD FROM $\text{SiH}_4/\text{NH}_3/\text{N}_2\text{O}$ GASEOUS MIXTURE, P. Temple-Boyer, B. Hajji, A. Martinez, LAAS-CNRS, 7 Av. du colonel Roche, 31077 Toulouse Cx 4, France, J.L. Alay and J.R. Morante, Dept. d'electronica, Facultat de Fisica, Universitat de Barcelona, Av. Diagonal 645, 08028 Barcelona, Spain*
- H-X.2 08:50-09:10 *A HIGH TEMPERATURE PRESSURE SENSOR PREPARED BY SELECTIVE DEPOSITION OF CUBIC SILICON CARBIDE ON SOI, M. Eickhoff, H. Moeller and G. Kroetz, Daimler-Benz AG Research and Technology, Dep. FT2/M, Postbox 80 04 65, 81663 Munich, Germany*
- H-X.3 09:10-09:30 *PIEZOELECTRIC PROPERTIES OF PZT FOR MICRO-CANTILEVER, E. Cattan, T. Haccart, G. Vêlu, D. Rémiens, Laboratoire des Matériaux Avancés Céramiques, Université de Valenciennes et du Hainaut-Cambrésis, ZI Champ de l'Abbesse, 59600 Maubeuge, France*
- H-X.4 09:30-09:50 *LOW TEMPERATURE CRYSTALLIZED Ti RICH NiTi SHAPE MEMORY ALLOY FILMS FOR MICROACTUATORS, J.L. Seguin, M. Bendahan, A. Isalgue*, V. Esteve**, H. Carchano and V. Torra*, Laboratoire EPCM, Case A62, Faculté des Sciences de Saint Jérôme, 13397 Marseille Cedex 20, France; *CIRG-DFA UPC, Campus Nord 84, 08034 Barcelona, Spain; **DIOC-ICD, U. Jaume I, P.O. Box 224, 12080 Castellon, Spain.*
- H-X.5 09:50-10:10 *MICROSENSORS BASED ON SEMICONDUCTOR WHISKERS, R. Baitsar, S. Varshava, L. Ostrovskii, State university «Lvivska Polytechnika», 1 Kotlyarevskii str., 290013 Lviv-13, Ukraine*

10:10-10:50

BREAK

SESSION XI - Porous Silicon II

- H-XI.1 10:50-11:30 -Invited- *PERMEATED POROUS SILICON FOR HYDROCARBON SENSOR FABRICATION, R. Angelucci, A. Poggi, L. Dori, G.C. Cardinali, A. Tagliani, CNR LAMEL - Institute, via Gobetti 101, 40129 Bologna, Italy*
- H-XI.2 11:30-11:50 *POROUS SILICON FOR OPTICAL WAVEGUIDES: BIREFRINGENCE AND DEPOLARIZATION EFFECTS, M. Le Doucen, J. Charrier, L. Haji and P. Joubert, Groupe de Microélectronique et Visualisation, I.U.T. de Lannion, BP150, 22302 Lannion Cedex, France*

11:50

LUNCH

END OF SYMPOSIUM H

SYMPOSIUM H

SYMPOSIUM H
POSTER SESSION

Wednesday June 17, 1998
Mercredi 17 juin 1998

Afternoon
Après-midi

Poster Session I
14:00-16:00

- H/P1 **MICROSTRUCTURE OF CARBON-COPPER INTERFACE IN COPPER-BASED METAL MATRIX COMPOSITES**, A. Berner, Dept. of Mater. Eng., Technion, 32000 Haifa, Israel; K. Mundim and D.E. Ellis, Dept. of Phys. and Astronomy, Northwestern Uni., Evanston, IL 60208, USA; S. Dorfman, Dept. of Phys., Technion, 32000 Haifa, Israel; D. Fuks and R. Evenhaim, Mater. Eng. Dept., POB 653, BGU, Beer Sheva, Israel
- H/P2 **MICROALLOYING OF TUNGSTEN AND INTERATOMIC INTERACTIONS WITH ALLOYING ELEMENTS**, D. Fuks and V. Liubich, Mater. Eng. Dept., POB 653, BGU, Beer Sheva, Israel; S. Dorfman, Dept. of Phys., Technion, 32000 Haifa, Israel
- H/P3 **NEW METALLURGICAL SYSTEMS FOR ELECTRONIC SOLDERING APPLICATIONS**, C. Gonçalves, J. Ferreira, L. Grigore, I. Ferreira, E. Fortunato, R. Martins, T. Harder*, DCM/FCT-UNL, CEMOP-UNINOVA and CEM, Quinta da Torre, 2825 Monte de Caparica, Portugal; *Fraunhofer Institute, Itzoe, Germany
- H/P4 **ALUMINIUMOXIDE SUBSTRATES FOR THE POWER MICROWAVE AMPLIFIERS**, V.V. Murav'ev*, A.A. Tamelo*, U.M. Byahun*, A.M. Nikitin**, U.M. Parkun*, *Belarusian State University of Informatics and Radioelectronics, vul. Petrusya Brobki 6, 220027 Minsk, Belarus; **Minsk Research Institute of Radio Materials, vul. Kizhevataga 86, 220115 Minsk, Belarus
- H/P5 **STRUCTURE AND PROPERTIES OF POROUS SILICON OBTAINED BY PHOTOANODIZATION**, E.V. Astrova, V.V. Ratnikov, R.F. Vitman, A.A. Lebedev, A.D. Remenyuk, A.F. Ioffe Physico-Technical Institute, Russian Academy of Sciences, 26 Polytekhnicheskaya, 194021 St-Petersburg, Russia
- H/P6 **OBTENTION AND CHARACTERIZATION OF BIO-ENGINEERED LAYERS ONTO SILICA BASED MICROSTRUCTURES**, S. Falipou, J.-M. Chovelon, C. Martelet, Laboratoire d'Ingénierie et Fonctionnalisation des Surfaces, CNRS/UMR 5621, Ecole Centrale de Lyon, BP163, 69131 Ecully Cedex, France and J. Margonari, D. Cathignol, INSERM, Unité 281: Recherches sur la Détection et le Traitement de la Prolifération Tissulaire par Agents Physiques, 151 Cours Albert Thomas, 69424 Lyon Cedex 03, France
- H/P7 **CHARACTERIZATION OF THE NONLINEAR OPTICAL PROPERTIES OF CRYSTALS BY THE SHEW TECHNIQUE**, R. Kremer, A. Boudrioua and J.C. Loulergue, Laboratoire MOPS / CLOES, 2 rue E. Belin, 57070 Metz, France
- H/P8 **MECHANICAL STABILITY OF RF-SPUTTERED AND RTA-ANNEALED Pb(Zr,Ti)O₃ THIN FILMS**, E. Defaÿ, M. Leberre, B. Semmache and D. Barbier, Laboratoire de Physique de la Matière, Bât 502, INSA de Lyon, 20 av. A. Einstein, 69621 Villeurbanne Cedex, France
- H/P9 **GROWTH OF Li_xMn₂O₄ AND LiCoO₂ THIN FILMS ELECTRODES FOR ELECTROCHEMICAL SENSORS**, M. Morcrette, A. Laurent, P. Barboux*, T. Brousse**, J. Perrière; Groupe de Physique des Solides, Universités Paris VII et Paris VI, Tour 23, 2 Place Jussieu, 75251 Paris Cedex 05, France; *Physique de la Matière Condensée, Ecole Polytechnique, 91128 Palaiseau Cedex, France, **Laboratoire de génie des Matériaux, ISITEM, Rue Christian Pauc, BP 90604, 44306 Nantes Cedex 3, France
- H/P10 **SCANNING ACOUSTIC MICROSCOPY: A TOOL FOR MEASURING CROSSLINKING GRADIENTS IN PHOTOPOLYMER MATERIALS**, L. Simonin, J.J. Hunsinger and D.J. Loughnot, Equipe Microscopie acoustique, LERMPs, Institut Polytechnique de Sévenans, 90010 Belfort Cedex, France
- H/P11 **PREPARATION OF THIN FILMS OF COPPER(I) BROMIDE FOR GAS SENSORS**, J.-L. Seguin, M. Bendahan, P. Lauque, C. Jacolin, M. Pasquinelli* and P. Knauth**, Laboratoire d'Electronique et Physicochimie des Couches Minces, Case A62; *Laboratoire Défauts dans les Semiconducteurs et leurs Oxydes, Case 231; **Laboratoire EDIFIS-Métallurgie (UMR CNRS 6518), Case 511, Faculté des Sciences de Saint Jérôme, 13397 Marseille Cedex 20, France
- H/P12 **NI₂ THIN FILMS AS A GATE OF MOS CAPACITY SENSORS**, K. Aguir, M. Bendahan, J.-L. Seguin and H. Carchano, Laboratoire d'Electronique et Physicochimie des Couches Minces, Case A62, Faculté des Sciences de Saint Jérôme, 13397 Marseille Cedex 20, France

SYMPOSIUM H

- H/P13 *MECHANISM OF POROUS SILICON FORMATION BY SPECIFIC SURFACE CHEMISTRIES*, V. Polishchuk, E. Souteyrand, J.R. Martin, V. Skryshevsky, V. Strikha, IFoS-Groupe PCI, Ecole Centrale de Lyon, 36 Av. Guy de Collongue, BP163, 69131 Ecully Cedex, France
- H/P14 *A THERMOELECTRIC CONVERTER FOR ENERGY SUPPLY*, H. Glosch, M. Ashauer, U. Pfeiffer*, W. Lang, HSG-IMT: Hahn-Schickard-Gesellschaft, Institute of Micromachining and Information Technology, Wilhelm-Schickard-Str. 10, 78052 Villingen-Schwenningen, Germany; *KUNDO Systemtechnik, St. Georgen, Germany
- H-P15 *GALVANIC POROUS SILICON FORMATION WITHOUT EXTERNAL CONTACTS*, C.M.A. Ashruf, P.J. French, Delft University of Technology, PO Box 5031, 2600 GA Delft, P.M.M.C. Bressers, ECN, PO Box 1, 1755 ZG Petten, J.J. Kelly, Utrecht University, PO Box 80000, 3508 TA Utrecht, The Netherlands
- H/P16 *THE MOST POSSIBLE DISTORTIONS TYPICAL FOR LAYER CRYSTALS WITH $P6_3/mmc$ STRUCTURE*, O.A. Buryi., C.C. Tovstiyuk, Semiconductors department, State University "Lvivska Polytechnica", Bandera street, 12, 290646, Lviv, Ukraine
- H/P17 *DENSITY DETERMINATION OF MATERIALS IN MICROSTRUCTURES BY RBS METHOD*, V.K. Egorov, I.A. Sosnin, Lab. Nucl. Phys. IPMT RAS, Chernogolovka, Institute prospect 19, 142432 Moscow dist., Russia; O.S. Kondratiev, Mech. and Math. Dept., Moscow State Univ., Moscow, Russia
- H/P18 *ELECTROPHYSICAL PROPERTIES, MICROSTRUCTURAL FEATURES AND SYNTHESIS OF SOLID SOLUTIONS BASED ON BARIUM TITANATE*, L.L. Loujetskii, Non-Linear Sensors Laboratory, Drohobych State Pedagogical Institute, 24 Iv.Franko Str., 293720 Drohobych, Lviv Region, Ukraine
- H/P19 *THE PHONON PARTICULARITY OF INSE, BAND EN THE ELASTIC PROPERTIE*, O.V. Stachiv, C.C. Tovstiyuk, Semi-conductors Department., State University «Lviv Politechnica», Bandera str. 12, UA 290646, Lviv, Ukraine
- H/P20 *IR OPTICAL PROPERTIES OF ORGANIC DYE LAYERS PRODUCED AT DIFFERENT TECHNOLOGICAL REGIMES*, L.V. Popereenko, K.L. Vinnichenko, Taras Shevchenko Univ., 252022 Kyiv, Ukraine, V.G. Kravets, Inst. for Inform. Rec.Probl., Kyiv 252113, Ukraine, A. Roeseler, ISAS-LSMU, 12489 Berlin, Germany
- H/P21 *REM-STUDY OF ELECTROCHEMICAL FORMED PILLARED MICROSTRUCTURES*, A.I. Vorobyova, E.A. Outkina, Belorussian State University of Informatics and Radioelectronics, 220027 Minsk, P.Brovky str. 6, Belarus
- H/P22 *THE $In_{1-x}Ga_x$ SEMICONDUCTING SUBSTITUTIVE SOLID SOLUTION INCORPORATED INTO ZEOLITE MATRIX*, R. Peleshchysyn, A. Frani, Experimental Physics Dept. of Lviv State University, 50 Dragomanova St., 290005 Lviv, Ukraine and M. Bublyk, Lviv Institute of Management, 57, 700-richchya mista Lvova St., 290601 Lviv, Ukraine
- H/P23 *SOME PARTICULAR ASPECTS OF DEFINE THE THICKNESS OF THE MEMBRANE BY BORON DIFFUSION PROCESSES*, E. Manea, R. Muller, A. Popescu, National Institute for Research and Development of Microtechnology PO box 38-160, Bucharest, Romania
- H/P24 *OPTICAL SYSTEM AND METHOD FOR REAL TIME POSITION CONTROL IN EXPERIMENTAL EQUIPMENT FOR LOCAL IRRADIATION*, R. Rădvan, D. Ghica, R. Savastriu, National Institute of Optoelectronics, PO Box MG-22, 76900 Bucharest, Romania
- H/P25 *POROUS SILICON CONTROL IN SITU AND THE AMBIENT INFLUENCE ON ITS PROPERTIES*, D.I. Bilenko, O.Ya. Belobrovaya, O.Yu. Coldobanova, E.A. Jarkova, E.I. Khasina, V.P. Polyanskaja, T.E. Mel'nikova, I.B. Mysenko, V.V. Smirnov, Saratov State University, Russia
- H/P26 *MICROSYSTEM STRUCTURES CONTROL IN SITU*, D.I. Bilenko, O.Ya. Belobrovaya, O.Yu. Coldobanova, A.I. Smirnov, V.V. Smirnov, V.D. Tsiporukha, Saratov State University, Russia
- H/P27 *POROUS SILICON AS SUBSTRATE FOR IONS SENSORS*, M. Ben Ali, R. Mlika and H. Ben Ouada, Laboratoire de Physique des Interfaces, Faculté des Sciences de Monastir, Route de l'Environnement, 5000 Monastir, Tunisia; R. M'ghaïeth and H. Maaref, Laboratoire de Physique des Semiconducteurs, Faculté des Sciences de Monastir, Route de l'Environnement, 5000 Monastir, Tunisia

E-MRS'98 SPRING MEETING



SYMPOSIUM I

Rapid Thermal Processing

Symposium Organizers

A. SLAOUI CNRS/PHASE, Strasbourg, France

J.C. MULLER CNRS/PHASE, Strasbourg, France

T. THEILER STEAG-AST, Dornstadt, Germany

R.K. SINGH University of Florida, USA

The assistance provided by

J.I.P.ELEC

(France)

is acknowledged with gratitude.

SYMPOSIUM I

Tuesday June 16, 1998
Mardi 16 juin 1998

Morning
Matin

SESSION I - Equipments in RTP

Chairperson: F. Roozboom, Philips Research, Eindhoven, The Netherlands

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|-------|-------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I-I.1 | 9:00-9:30 | - Invited - | RAPID THERMAL PROCESSING TECHNOLOGY FOR THE 21st CENTURY, P.J. Timans, AG Associates, 4425 Fortran Drive, San Jose, CA 95134-2300, USA |
| I-I.2 | 9:30-9:50 | | QUARTZ INFRARED HALOGEN LAMPS FOR SEMICONDUCTOR WAFER HEATING, A. Lang and S. Chehu, Philips Lighting, Chemin de Montrichard, B.P. 149, 54705 Pont-A-Mousson Cedex, France |
| I-I.3 | 9:50-10:10 | | SPECIFIC RTP EQUIPMENT FOR DEEP JUNCTION FORMATION, J.M. Dillhae, L. Cornibert, C. Ganibal, C. Lancelle, LAAS-CNRS, 7 avenue du colonel Roche, 31077 Toulouse CEDEX, France |
| I-I.4 | 10:10-10:30 | | RTP EQUIPMENT DEVELOPMENT FOR SOLAR CELL PRODUCTION, B. Groh, T. Theiler, STEAG-AST Elektronik GmbH, Daimlerstr. 10, 89160 Dornstadt, Germany |

10:30-11:00

BREAK

SESSION I- Modeling & Control in RTP

Chairperson: R. Singh, Clemson University, Clemson, USA

- | | | | |
|-------|-------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I-I.5 | 11:00-11:30 | - Invited - | MODELLING AND OFF-LINE OPTIMIZATION OF 300MM RAPID THERMAL PROCESSING SYSTEM, A. Tillmann, STEAG AST Elektronik GmbH, Daimlerstrasse 10, 89160 Dornstadt, Germany |
| I-I.6 | 11:30-11:50 | | PERSPECTIVES ON EMISSIVITY MEASUREMENTS AND MODELING IN SEMICONDUCTORS, N.M. Ravindra, B. Sopori*, S. Abedrabbo and W. Chen*, New Jersey Institute of Technology, Newark NJ 07102, USA; *National Renewable Energy Labs, Golden CO 80401, USA |
| I-I.7 | 11:50-12:10 | | NEW METHODS OF METROLOGY DATA ANALYSIS DURING SEMICONDUCTOR PROCESSING AND APPLICATION TO RAPID THERMAL PROCESSING, M. Boin, Scientific Software, Graf-Albrecht-Str. 24, 89160 Tomerdingen, Germany; W. Lerch, STEAG AST Elektronik GmbH, Daimlerstr. 10, 89160 Dornstadt, Germany |
| I-I.8 | 12:10-12:30 | | COUPLED SIMULATION OF GAS FLOW AND HEAT TRANSFER IN AN RTP-SYSTEM WITH ROTATING WAFER, S. Poscher, Fraunhofer Institut f. Integrierte Schaltungen - Bereich Bauelementetechnologie, Schottkystr. 10, 91058 Erlangen, Germany, and T. Theiler, STEAG-AST-Elektronik, Daimlerstr. 10, 89160 Dornstadt, Germany |

12:30-14:00

LUNCH

SYMPOSIUM I

Tuesday June 16, 1998
Mardi 16 juin 1998

Afternoon
Après-midi

SESSION II - Diffusion, shallow junctions & Activation
Chairperson: A. Timans, AG Associates, San Jose, USA

- I-II.1 14:00-14:30 - Invited - FREE CARRIER LIFETIME STUDIES & DOPANT DIFFUSION DURING RAPID THERMAL PROCESSING OF SEMICONDUCTORS, R.V. Nagabushnam* and R.K. Singh, Dept. of Materials Science & Engineering, Univ. of Florida, Gainesville FL32611, USA
- I-II.2 14:30-14:50 CHANGING FROM RAPID THERMAL PROCESSING TO RAPID PHOTO-THERMAL PROCESSING: WHAT DOES IT BUY FROM A PARTICULAR TECHNOLOGY, R. Singh, V. Parihar, S. Venkataraman, K.F. Poole, Dep. of Electr. Eng. & Centre for Si nanoelectronics, Clemson Univ., Clemson SC 29634, USA; R.P.S. Thakur, AG Associates, San Jose CA95134; and A. Rohatgi, School of Electr. Eng., Georgia Inst. of Technology, Atlanta GA 30322, USA
- I-II.3 14:50-15:10 PHOSPHORUS DIFFUSION DURING RAPID THERMAL ANNEALING FROM A SOD SOURCE, D. Mathiot, A. Lachiq, S. Noël, A. Slaoui, and J.C. Muller, CNRS, Laboratoire PHASE (UPR 292), 23, Rue du Loess, B.P. 20, 67037 Strasbourg Cedex 2, France
- I-II.4 15:10-15:30 ULTRA-SHALLOW JUNCTION FORMATION BY RAPID THERMAL ANNEALING IN A FURNACE-BASED RTP SYSTEM, A. Agarwal, Eaton Corporation, Semiconductor Equipment Operations, 55 Cherry Hill Drive, Beverly MA 01915, USA; P. Frisella and J. Hebb, Eaton Corporation, Thermal Processing Systems, 2 Centennial Drive, Peabody MA 01960, USA

15:30-16:00 BREAK

SESSION III - Silicidation
Chairperson: R.V. Nagabushnam, APRDL Motorola Inc., Austin, USA

- I-III.1 16:00-16:30 CONTACTS TO SHALLOW JUNCTIONS USING TITANIUM SILICIDE WITH IN-SITU FORMED DIFFUSION BARRIERS, W. Zagoradzou-Wosik, J. Li, I. Rusakova, S.R. Gooty, Z.H. Zhang, D. Marton, C. Lin, D. Simons*, P. Chi, R.J. Bleiler**, Electrical & Computer Engineering Dept, University of Houston, 4800 Calhoun, Houston, TX77204, USA; * NIST, Gaithersburg MD20899, USA; **Evans Texas, Austin TX78754, USA
- I-III.2 16:30-16:50 EFFECT OF STRESS ON SILICIDE FORMATION KINETICS IN THIN FILM TITANIUM-SILICON SYSTEM, R.V. Nagabushnam* and R.K. Singh, Dept. of Materials Science & Engineering, Univ. of Florida, Gainesville FL32611, USA; currently at APRDL Motorola Inc., Austin TX78731, USA
- I-III.3 16:50-17:10 SILICIDATION AND ELLIPSOMETRIC CHARACTERIZATION, D.A. Tonova, J.E. Karmakov, A. Konova, Department of Condensed Matter Physics, Faculty of Physics, Sofia University, 5 J. Bourchier Blvd., 1164 Sofia, Bulgaria
- I-III.4 17:10-17:30 STRAIN RELAXATION AND DOPANT DISTRIBUTION DURING THE RAPID THERMAL ANNEALING OF Co WITH Si/SiO₂ HETERO-STRUCTURES, Y. Miron*, M. Fastowa*, C. Cytermann**, R. Brenner**, M. Eisenberg**, *Department of Materials Engineering and **Solid State Institute, Technion, 32000 Haifa, Israel and M. Gluck, H. Kibbel, U. Konig, Daimler-Benz AG, Ulm Research Center, Germany
- I-III.5 17:30-17:50 RAPID THERMAL ANNEALING OF Zr/SiGeC CONTACTS, M. Barthula, V. Aubry-Fortuna, O. Chaix-Pluchery*, F. Meyer, A. Eyal**, M. Etzenberg**, Institut d'Electronique Fondamentale, CNRS URA 22, Bât. 220, Université Paris Sud, 91405 Orsay Cedex, France; *LMGP, CNRS 5628, ENSPG, BP75, 38402 St Martin d'Hères, France; **Solid-State Technion, Haifa 32000, Israel

SYMPOSIUM I

Wednesday June 17, 1998
Mercredi 17 juin 1998

Afternoon
Après-midi

SESSION IV - Dielectric Formation & Other Compounds

Chairperson: A. Tillman, STEAG AST Elektronik GmbH, Dornstadt, Germany

I-IV.1 14:00-14:30 - Invited - ULTRA-HIGH TEMPERATURE RAPID THERMAL ANNEALING OF GaN, X. Cao, R. Singh, S.J. Pearton, Department of Materials Science and Engineering, University of Florida, Gainesville FL 32611, USA; M. Fu and J.A. Sekhar, MHI, Cincinnati, OH 45212, USA; R.G. Wilson, Consultant, Winnetka, CA 92065, U.S.A. and J.C. Zolper, Office of Naval Research, Arlington VA 22217, USA

I-IV.2 14:30-14:50 INFLUENCE OF VAPOR PHASE PRE-OXIDE-CLEANING ON THE OXIDATION CHARACTERISTICS, B. Froeschle, N. Sacher, T. Theiler, STEAG-AST Elektronik GmbH, Daimlerstrasse 10, 89160 Dornstadt, Germany

I-IV.3 14:50-15:10 RAPID THERMAL OXIDATION OF HIGHLY PHOSPHORUS DOPED POLY-SILICON THIN FILMS, S. Kallel, B. Semmache, M. Lemiti, A. Laugier, Laboratoire de Physique de la Matière, Bât 502, Institut National des Sciences Appliquées de Lyon, 20 Avenue Albert Einstein, 69621, Villeurbanne cedex, France

I-IV.4 15:10-15:30 RAPID THERMAL OXIDATION OF POROUS SILICON FOR PASSIVATION PURPOSE, L. Debarge, L. Stalmans*, J. Poortmans*, J.P. Stoquert and A. Slaoui, CNRS, Laboratoire PHASE, BP 20, 67037 Strasbourg cedex 2, France; *IMEC-MAP/PV, Kapeldreef 75, 3001 Leuven, Belgium

15:30-16:00 BREAK

SESSION V - RTCVD Process

Chairperson: T. Theiler, STEAG AST Elektronik GmbH, Dornstadt, Germany

I-V.1 16:00-16:20 DEPOSITION AND CRYSTALLIZATION OF a-Si THIN FILMS BY RAPID THERMAL PROCESSING, S. Girginoudi, D. Girginoudi, N. Georgoulas, A. Thanailakis, Department of Electrical and Computer Engineering, Democritus University of Thrace, 67100 Xanthi, Greece and J. Stoemenos, Department of Physics, Aristotle University of Thessaloniki, 54006 Thessaloniki, Greece

I-V.2 16:20-16:40 THE INITIAL STAGES OF Si THIN DEPOSITS ON FOREIGN SUBSTRATES IN A THERMAL CVD-REACTOR, D. Angermeier, R. Monna, S. Bourdais, A. Slaoui and J.C. Muller, CNRS-PHASE, 23 rue du Loess, 67037 Strasbourg, France

I-V.3 16:40-17:00 GROWTH AND PHYSICAL PROPERTIES OF IN-SITU PHOSPHORUS DOPED RTPCVD POLYCRYSTALLINE SILICON THIN FILMS, S. Kallel, B. Semmache, M. Lemiti, A. Laugier, Laboratoire de Physique de la Matière, Bât 502, Institut National des Sciences Appliquées de Lyon, 20 Avenue Albert Einstein, 69621 Villeurbanne cedex, France and H. Jaffrezik, Métallurgie structurale, Ecole Centrale de Lyon, 36 Av. G. de Collonge, BP 163, 69131 Ecully, France

I-V.4 17:00-17:20 OPTIMIZATION OF A TITANIUM NITRIDE RAPID THERMAL CHEMICAL VAPOR DEPOSITION PROCESS, A. Bouteville, H. de Baynast, L. Imhoff, J.C. Remy, Laboratoire de Physico-Chimie des Surfaces, ENSAM - CER d'Angers, 2 Bd du Ronceray, BP 3525, 49035 Angers, France

I-V.5 17:20-17:40 SIMULATION OF HEAT TRANSFER AND THERMAL STRESSES IN METALLIZED Si-SUBSTRATE UNDER RAPID INFRARED HEATING, A.A. Dostanko, Y.V. Baranov, A.A. Kostukevitch, I.N. Schukina, S.P. Kundas, D.N. Zwjagov, Belarus State University of Informatics and Radioelectronics, 6, R.Brovka Str., Minsk, 220027, Belarus

SYMPOSIUM I

Thursday June 18, 1998
Jeudi 18 juin 1998

Morning
Matin

SESSION VI - Advanced Processing

Chairperson: S.J. Pearton, University of Florida, Gainesville, USA

I-VI.1 **9:00-9:30** - Invited - **RAPID THERMAL PROCESSING AS A NEW EMERGING TECHNOLOGY IN FIELD-ANNEALING OF THIN MAGNETIC FILMS FOR RECORDING HEADS**, F. Roozeboom, Philips Research, Prof. Holstlaan 4, 5656 AA Eindhoven, The Netherlands; S. Abedrabbo and N.M. Ravindra, Dept. of Physics, New Jersey Institute of Technology, Newark NJ 07102, USA; H. Walk and M. Falter, Steag-AST Elektronik, Daimlerstrasse 10, 89160 Dornstadt, Germany

I-VI.2 **9:30-10:00** - Invited - **EPITAXIAL GROWTH OF Si-Ge LAYERS FOR ULSI APPLICATIONS**, J.L. Regolini, T. Baffert, J. Pejnefors, C. Morin, M. Marty*, A. Chantre and T. Skotnicki, FRANCE TELECOM-CNET Grenoble, 28 Ch. Du Vieux Chêne, 38243 Meylan Cedex, France; *SGS-Thomson, BP 16, 38921 Crolles Cedex, France

I-VI.3 **10:00-10:20** **STRUCTURAL TRANSFORMATION IN BULK GaAs AND STRUCTURES UNDER MICROWAVE TREATMENT**, T.G. Kryshab, O.S. Lytvyn, P.M. Lytvyn, I.V. Prokopenko, Institute of Semiconductor Physics, National Academy of Sciences of the Ukraine, 45 Nauki prospect, 252028 Kiev, Ukraine

10:20-11:00 **BREAK**

SESSION VII - Solar Cells & Large Area Devices

Chairperson: N.M. Ravindra, University Heights, Newark, USA

I-VII.1 **11:00-11:20** **SURFACE MODIFICATIONS IN Si AFTER RTA**, E. Susi, A. Cavallini*, A. Castaldini*, CNR, Istituto LAMEL, via Gobetti 101, 40129 Bologna, Italy; *Dipartimento di Fisica and INFN, Università di Bologna, Italy

I-VII.2 **11:20-11:40** **SELECTIVE DOPING OF SILICON BY RAPID THERMAL AND LASER ASSISTED PROCESSES**, L. Pirozzi, U. Besi Vetrilla, E. Salza, S. Noël*, A. Slaoui* and J.C. Muller*, ENEA Casaccia, Via Anguillarese 301, 00060 Roma, Italy; *PHASE-CNRS, 23 Rue du loess, 67037 Strasbourg, France

I-VII.3 **11:40-12:00** **RAPID THERMAL ANNEALING APPLIED TO THE OPTIMIZATION OF TITANIUM OXIDE ARC**, M. Lemiti, J.P. Boyeaux, H. El Omari, A. Kaminski and A. Laugier, Laboratoire de Physique de la Matière, UMR 5511, INSA de Lyon, 20 Avenue Albert Einstein, 69621 Villeurbanne Cedex, France

I-VII.4 **12:00-12:20** **RAPID THERMAL PROCESSING OF PRINTED OHMIC CONTACTS FOR SILICON SOLAR CELLS**, P. Hähne, D. Huljic, I. Reis, Fraunhofer-Institut for Solare Energiesysteme ISE, Olmannsstr. 5, 79100 Freiburg, Germany

12:20 **LUNCH**

END OF SYMPOSIUM I

E-MRS'98 SPRING MEETING



SYMPOSIUM J

Ion Implantation into Semiconductors, Oxides and Ceramics

Symposium Organizers

J.K.L. LINDNER	Universität Augsburg, Augsburg, Germany
P.L.F. HEMMENT	University of Surrey, Guildford, UK
H.A. ATWATER	California Institute of Technology, Pasadena, USA
B. SVENSSON	Royal Institute of Technology, Kista-Stockholm, Sweden

The assistance provided by
High Voltage Engineering Europa B.V.
is acknowledged with gratitude. *(The Netherlands)*

SYMPOSIUM J

Tuesday, June 16, 1998

Mardi 16 juin 1998

Morning

Matin

8:40-8:45

OPENING SESSION

SESSION I - Group IV Semiconductors, Part 1

Chairpersons: S. Coffa, CNR-IMETEM, Catania, Italy

J. Lindner, Universität Augsburg, Institut für Physik, Augsburg, Germany

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|-------|-------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| J-I.1 | 8:45-9:15 | - Invited - | NUCLEATION GROWTH AND DISSOLUTION OF EXTENDED DEFECTS IN IMPLANTED Si: IMPACT ON DOPANT DIFFUSION, A. Claverie, L.F. Giles, M. Omri, B. de Mauduit, G. Ben Assayag and C. Bonafos, CEMES/CNRS, BP 4347, 31055 Toulouse Cedex, France |
| J-I.2 | 9:15-9:30 | | MODELISATION OF THE KINETICS OF DISLOCATION LOOPS, E. Lampin, V. Senez, IEMN, Avenue Poincaré, B.P. 69, 59652 Villeneuve d'Ascq Cedex, France |
| J-I.3 | 9:30-9:45 | | REACTIVE PLASMA ETCHING: A NOVEL METHOD TO REDUCE TRANSIENT ENHANCED DIFFUSION OF LOW ENERGY IMPLANTED BORON IN SILICON, G. Mannino, F. Priolo, INFN and Dipartimento di Fisica, Catania, Italy and V. Privitera, IMETEM (CNR), Catania, Italy |
| J-I.4 | 9:45-10:00 | | MIGRATION AND INTERACTION PROPERTIES OF ION BEAM GENERATED POINT DEFECTS IN c-Si, S. Libertino and S. Coffa, CNR-IMETEM, Stradale Primrose 50, 95121 Catania, Italy |
| J-I.5 | 10:00-10:15 | | DEFECTS IN a-Si-IMPLANTED a-Si:H FILMS DEPENDING ON THEIR INITIAL PARAMETERS, O.A. Golikova, M.M. Kazanin, A.F. Ioffe Institute, 194021 St. Petersburg, Russia |
| | 10:15-10:45 | | BREAK |

SYMPOSIUM J

SESSION II - Group IV Semiconductors, Part 2

Chairpersons: J. Lindner, *Universität Augsburg, Institut für Physik, Augsburg, Germany*
S. Coffa, *CNR-IMETEM, Catania, Italy*

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| J-II.1 | 10:45-11:15 | - Invited - | STRAIN RELAXATION OF EPITAXIAL Si-Ge-LAYERS ON Si IMPROVED BY HYDROGEN IMPLANTATION, S. Mantl, R. Liedtke, B. Holländer, St. Mesters, Institut für Schicht-und Ionentechnik, ISI-IT, Forschungszentrum Jülich, 52425 Jülich, Germany, H.-J. Herzog, H. Kibbel and T. Hackbarth, Daimler Benz Forschungsinstitut Ulm, 89013 Ulm, Germany |
| J-II.2 | 11:15-11:30 | | FORMATION OF EXTENDED DEFECTS AND STRAIN RELAXATION IN ION BEAM SYNTHESISED SiGe ALLOYS, E. Cristiano, A. Nejim and P.L.F. Hemment, School of Electronic Engineering, University of Surrey, UK; Yu. Suprun-Belevich, Department of Physics of Semiconductors, Belarusian State University, Minsk, Belarus and A. Claverie, CEMES-LOE/CNRS, BP 4347, Toulouse, France |
| J-II.3 | 11:30-11:45 | | SiGe-ON-INSULATOR SUBSTRATE FABRICATED BY LOW ENERGY OXYGEN IMPLANTATION, Yukari Ishikawa, T. Saito and N. Shibata, Japan Fine Ceramics Center, 2-4-1 Mutsuno, Atsuta, Nagoya 456-8587, Japan; S. Fukatsu, Department of Pure and Applied Sciences, The University of Tokyo, 3-8-1 Komaba, Meguro-ku, Tokyo 153-8902, Japan |
| J-II.4 | 11:45-12:00 | | TEM STUDIES OF THE DEFECTS INTRODUCED BY ION IMPLANTATION IN SiC, L. Grisolia, B. de Mauduit, J. Gimbert*, Th. Billon*, G. Ben Assayag, C. Bourgerette and A. Claverie, CEMES/CNRS, BP 4347, 31055 Toulouse, France; *LETI/CEA, Centre d'Etudes Nucléaires, 38054 Grenoble Cedex 9, France |
| J-II.5 | 12:00-12:15 | | ELECTRONIC STOPPING POWER FOR MONTE CARLO SIMULATION OF ION IMPLANTATION INTO SiC, E. Morvan, P. Godignon, S. Berberich, M. Vellvehi, J. Millán, Centro Nacional de Microelectronica (CNM-CSIC) Campus UAB, 08193 Bellaterra, Spain |
| J-II.6 | 12:15-12:30 | | DOPING OF 6H-SiC pn STRUCTURES BY PROTON IRRADIATION, A.A. Lebedev, A.M. Strel'chuk, N.S. Savkina, D.V. Davydov, A.F. Ioffe Physico Technical Institute, Polytechnicheskaya 26, St. Petersburg, Russia and V.V. Kozlovski, St. Petersburg State Technical University, Polytechnicheskaya 29, St. Petersburg, Russia |
| | 12:30-14:00 | | LUNCH |

SYMPOSIUM J

Tuesday, June 16, 1998
Mardi 16 juin 1998

Afternoon
Après-midi

SESSION III - Ion Implantation for Optical Applications, Part 1

Chairpersons : S. Mantl, *ISI-IT, Forschungszentrum Jülich, Jülich, Germany*
H. Atwater, *California Institute of Technology, TJ Watson Lab. of Applied Physics, Pasadena, CA, USA*

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| J-III.1 | 14:00-14:30 | - Invited - | ION IMPLANTATION DOPING OF CRYSTALLINE Si FOR OPTOELECTRONIC APPLICATIONS, S. Coffa, G. Franzó, CNR-IMETEM, Catania, Italy and F. Priolo, INFN and Dipartimento di Fisica, Catania, Italy |
| J-III.2 | 14:30-14:45 | | OPTICAL AND ELECTRICAL CHARACTERIZATIONS OF Mn DOPED P-TYPE b-FeSi ₂ , T. Takada**, Y. Makita*, T. Banba***, K. Shikama, H. Sanpei, M. Hasegawa*, A. Sandhu, Y. Hoshino***, H. Katsumata**** and S. Uekusa**, Tokai University, 1117 Kitananame, Hiratsuka 259-1207, Japan; *Electrotechnical Laboratory, 1-1-4 Umezono, Tsukuba, Ibaraki 305-8568, Japan; **Meiji University, 1-1-1 Higashi-mita, Tama, Kawasaki, Kanagawa 214-0033, Japan; ***Nippon Institute of Technology, 4-1 Gakuidai, Miyashiro, Minamisaitama 345-0826, Japan; ****Kyoto University, Sakyo, Kyoto 606-8317, Japan |
| J-III.3 | 14:45-15:00 | | ION BEAM SYNTHESIS OF METALLIC NANOCCLUSERS IN SiO ₂ : PREDICTIVE COMPUTER SIMULATION VERSUS, M. Strobel, K.-H. Heinig and W. Möller, Research Center Rossendorf, P.O.Box 510119, 01314 Dresden, Germany; A. Meldrum, C.W. White, and R.A. Zuhr, Oak Ridge National Laboratory, Oak Ridge TN 37831, USA |
| J-III.4 | 15:00-15:15 | | OPTICAL PROPERTIES OF INTERACTING Si NANOCCLUSERS IN SiO ₂ FABRICATED BY ION IMPLANTATION AND ANNEALING, T. Shimizu-Iwayama, Aichi University of Education, Igaya-cho, Kariya-shi, Aichi 448-8542, Japan and D.E. Hole, P.D. Townsend, University of Sussex, Brighton BN1 9QH, UK |
| | 15:15-15:45 | | BREAK |

SYMPOSIUM J

SESSION IV - Ion Implantation for Optical Applications, Part 2

Chairpersons : H. Atwater, *California Institute of Technology, TJ Watson Lab. of Applied Physics, Pasadena, CA, USA*

S. Mantl, *ISI-IT, Forschungszentrum Jülich, Jülich, Germany*

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| J-IV.1 | 15:45-16:00 | <i>HOMOGENEOUSLY SIZE DISTRIBUTED Ge NANOCLOUDS EMBEDDED IN SiO₂ LAYERS PRODUCED BY ION BEAM SYNTHESIS, A. Markwitz, L. Rebohle and W. Skorupa, Forschungszentrum Rossendorf Institut für Ionenstrahlphysik und Materialforschung, P.O. Box 510119, 01314 Dresden, Germany</i> |
| J-IV.2 | 16:00-16:15 | <i>ION BEAM SYNTHESIS AND STRUCTURAL CHARACTERIZATION OF ZnS NANOCRYSTALS IN SiO₂, C. Bonafos, B. Garrido, M. Lopez, A. Romano-Rodriguez, O. Gonzalez-Varona, A. Perez-Rodriguez and J.R. Morante, Departament d'Electronica, Universitat de Barcelona, Diagonal 645-647, 08028 Barcelona, Spain; R. Rodriguez, Asociacion de la Industria Navarra (AIN), 31191 Cordovilla, Pamplona, Spain</i> |
| J-IV.3 | 16:15-16:30 | <i>ION BEAM ASSISTED DEPOSITION OF ZIRCONIUM NITRIDES FOR MODULATED OPTICAL INDEX STRUCTURES, L. Pichon, A. Straboni, T. Girardeau, M. Drouet, F. Lignou, Laboratoire de Metallurgie Physique, Université de Poitiers, SP2MI, UMR 6630 CNRS, BP 179, 86960 Futuroscope cedex, France and J. Perrière, Groupe de Physique des Solides, Université Paris VI, tour 23, 2 place Jussieu, 75251 Paris Cedex 05, France</i> |
| J-IV.4 | 16:30-16:45 | <i>ION BEAM AND PHOTOLUMINESCENCE STUDIES OF Er AND O IMPLANTED GaN, E. Alves, M.F. da Silva, J.C. Soares*, R. Vianden**, J. Bartels**, A. Kozanecki***, Instituto Tecnológico e Nuclear (ITN), EN 10, 2685 Sacavém, Portugal; *Centro de Física Nuclear da Univ. de Lisboa, Av. Prof. Gama Pinto 2, 1699 Lisboa, Portugal; **ISKP, Univ. Bonn, Nussallee Str, 53115 Bonn, Germany; ***Institute of Physics, Polish Academy of Sciences, Al. Lotnikow 32/46, 02-668 Warsaw, Poland</i> |
| J-IV.5 | 16:45-17:00 | <i>THIN AMORPHOUS GALLIUM NITRIDE FILMS BY ION IMPLANTATION, S.R.P. Silva, S.A. Almeida and B.J. Sealy, School of Electronic Engineering, Information Technology and Mathematics, University of Surrey, Guildford, Surrey GU2 5XH, UK</i> |

SESSION V - Equipment

Chairpersons : J. Guylai, *Research Institute for Technical Physics and Materials Science, Budapest, Hungary*

B. Svensson, *Dept of Electronics, Royal Institute of Technology, Kista-Stockholm, Sweden*

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| J-V.1 | 17:00-17:30 | - Invited - <i>CHALLENGES AND EQUIPMENT IMPLICATIONS IN ION IMPLANTATION FOR SUB-0.25µm TECHNOLOGY, K. Funk and Y. Erokhin, Semiconductor Equipment Operations, Eaton Corporation, Kirchheim, Germany</i> |
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SYMPOSIUM J

Wednesday, June 17, 1998
 Mercredi 17 juin 1998

Afternoon
 Après-midi

SESSION VI - Ceramics and Oxides

Chairpersons : S.U. Campisano, *CNR-IMETEM, Catania, Italy*
 R. Yankow, *Forschungszentrum Rossendorf, Dresden, Germany*

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| J-VI.1 | 14:00-14:30 | - Invited - | ION IMPLANTATION IN TiO_2 ; DAMAGE PRODUCTION AND RECOVERY, LATTICE SITE LOCATION AND ELECTRICAL CONDUCTIVITY, R. Fromknecht, I. Khubeis*, S. Massing, O Meyer, <i>Forschungszentrum Karlsruhe, INF, POB 3640, 76021 Karlsruhe, Germany</i> , *Univ. of Amman, Dept. of Physics, Jordan |
| J-VI.2 | 14:30-14:45 | | STRUCTURAL STABILITY OF ION BOMBARDED CERAMICS, <u>EM. Ossi</u> , R. Pastorelli, <i>INFN-Dipartimento di Ingegneria Nucleare, Politecnico di Milano, via Ponzio 34/3, 20133 Milano, Italy</i> |
| J-VI.3 | 14:45-15:00 | | EFFECT OF H^+ AND O^+ PROPERTIES OF $\text{SrBi}_2\text{Ta}_2\text{O}_9$ FERROELECTRIC THIN FILMS, <u>Jianming Zeng*</u> , Chenglu Lin*, Lirong Zheng*, A. Pignolet**, M. Alexe**, E. Richter*** and D. Hesse**, *State Key Laboratory of Functional Materials for Informatics, Shanghai Institute of Metallurgy, Chinese Academy of Sciences, 200050 Shanghai, China; **Max-Planck-Institute of Microstructure Physics, Weinberg 2, 06120 Halle, Germany; ***Institute of Ion Beam Physics and Materials Research, 01314 Dresden, Germany |
| J-VI.4 | 15:00-15:15 | | ANNEALING BEHAVIOR OF DEFECTS IN HELIUM IMPLANTED MgO , <u>H. Schut</u> , A. van Veen, F. Labohm, and A. V. Fedorov, <i>IRI, Delft University of Technology, Mekelweg 15, 2629 JB Delft, The Netherlands</i> , E.A.C. Neef and R.J.M. Konings, <i>ECN, P.O. Box 1, 1755 ZG Petten, The Netherlands</i> |
| | 15:15-15:30 | | BREAK |

SESSION VII - Poster Session I

Chairpersons : B. Svensson, *Dept of Electronics, Royal Institute of Technology, Kista-Stockholm, Sweden*
 J. Lindner, *Universität Augsburg, Institut für Physik, Augsburg, Germany*

15:30-17:00 See programme of this poster session p. J-10 to J-12.

SESSION VIII - Poster Session II

Chairpersons : J. Lindner, *Universität Augsburg, Institut für Physik, Augsburg, Germany*
 B. Svensson, *Dept of Electronics, Royal Institute of Technology, Kista-Stockholm, Sweden*

17:00-18:30 See programme of this poster session p. J-13 to J-15.

SYMPOSIUM J

Thursday, June 18, 1998
 Jeudi 18 juin 1998

Morning
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SESSION IX - New Measurement Techniques

Chairpersons : B. Stritzker, *Universität Augsburg, Institut für Physik, Augsburg, Germany*
 T. Shimizu-Iwayama, *Aichi University of Education, Aichi, Japan*

- J-IX.1 9:00-9:30 - Invited - GLANCING INCIDENCE DIFFUSE X-RAY SCATTERING STUDIES OF IMPLANTATION DAMAGE IN Si, K. Nordlund, *Accelerator Laboratory, P.O. Box 43, 00014 University of Helsinki, Finland*; P. Partyka, I.K. Robinson and R.S. Averback, *Materials Research Laboratory, University of Illinois, Urbana, IL 61801, USA*; P. Ehrhart, *Institut für Festkörperforschung, Forschungszentrum Jülich, Jülich, Germany*
- J-IX.2 9:30-9:45 IMAGING OF IMPLANTATION DEFECTS BY X-RAY TOPOGRAPHY COMBINED WITH SURFACE ACOUSTIC WAVE EXCITATION, E. Zolotoyabko, *Technion-Israel Institute of Technology, Haifa 32000, Israel*
- J-IX.3 9:45-10:00 SYNCHROTRON RADIATION GRAZING INCIDENCE X-RAY DIFFRACTION: A NEW TOOL FOR STRUCTURAL INVESTIGATIONS OF ION IMPLANTED GLASSES, E. Zontone, *ESRF, BP 220, 38043 Grenoble Cedex, France* and F. D'Acapito, *CNR, Div. Sincr. Trieste e Grenoble, P.le Aldo Moro 7, 00185 Roma, Italy*
- J-IX.4 10:00-10:15 MAGNETIC BEHAVIOR OF NI⁺ IMPLANTED SILICA, O. Cintora Gonzalez, C. Estournès, J. Guille, *IPCMS-GMI (UMR 75040 CNRS), 23 rue du Loess, 67037 Strasbourg Cedex 2, France*, D. Muller and J.-J. Grob, *Laboratoire Phase (UPR 292 CNRS), 23 rue du Loess, 67037 Strasbourg Cedex 2, France*

10:15-10:45

BREAK

SESSION X - Group III-V and Other Semiconductors

Chairpersons : T. Shimizu-Iwayama, *Aichi University of Education, Aichi, Japan*
 B. Stritzker, *Universität Augsburg, Institut für Physik, Augsburg, Germany*

- J-X.1 10:45-11:15 - Invited - ATOMIC-LEVEL CHARACTERISATION OF THE STRUCTURE OF AMORPHISED GaAs UTILISING EXTENDED X-RAY ABSORPTION FINE STRUCTURE MEASUREMENTS, M.C. Ridgway and C.J. Glover, *Department of Electronic Materials Engineering, Australian National University, Canberra, Australia*, G.J. Foran, *Australian Nuclear Science and Technology Organisation, Menai, Australia* and K.M. Yu, *Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, USA*
- J-X.2 11:15-11:45 - Invited - COMPARATIVE STUDY OF DAMAGE PRODUCTION IN ION IMPLANTED III-V COMPOUNDS AT TEMPERATURES FROM 20K TO 450K, E. Wendler, B. Breger, W. Wesch, *Institut für Festkörperphysik, Friedrich-Schiller-Universität Jena, Max-Wien-Platz 1, 07743 Jena, Germany*
- J-X.3 11:45-12:00 SHALLOW JUNCTIONS IN p-In_{0.53}Ga_{0.47}As BY ION IMPLANTATION, M.N. Blanco, E. Redondo, C. Leon, J. Santamaria, G. Gonzalez-Diaz, *Dpto. Electronica, Fac. CC. Fisicas, U. Complutense, 28040 Madrid, Spain*
- J-X.4 12:00-12:15 EFFECTS OF HYDROGEN IMPLANTATION INTO GaN, S.J. Pearton, *Department of Materials Science and Engineering, University of Florida, Gainesville, FL 32611, USA*; R.A. Wilson, *Consultant, Winnetka, CA 92065, USA*; J.M. Zavada, *US Army Research Office, RTP, NC 27709, USA*; C.Y. Song, M.G. Weinstein and M. Stavola, *Department of Physics, Lehigh University, Bethlehem PA 18015, USA*
- J-X.5 12:15-12:30 PHOTOLUMINESCENCE STUDIES OF NEUTRON TRANSMUTATION DOPED InP:Fe, B. Mari, M.A. Hernandez, F.J. Navarro, *Dep. Fisica Aplicada, Universitat Politecnica de Valencia, Cami de Vera s/n, 46071 Valencia, Spain* and R. Fornari, *CNR-MASPEC Institute, Via Chiavar 18/A, 43100 Parma, Italy*

12:30-14:00

LUNCH

SYMPOSIUM J

Thursday, June 18, 1998
Jeudi 18 Juin 1998

Afternoon
Après-midi

SESSION XI - New Phase Formation, Part 1

Chairpersons : K. Nordlund, Accelerator Laboratory, University of Helsinki, Finland

C. Lin, Shanghai Inst. of Metallurgy, Chinese Academy of Sciences, Shanghai, China

- J-XI.1 14:00-14:30 - Invited - NANOCRYSTAL FORMATION IN SiO_2 : EXPERIMENTS, MODELLING AND COMPUTER SIMULATIONS, K.-H. Heinig, B. Schmidt, A. Markwitz, R. Grötzschel, M. Strobel, J. von Borany, Research Center Rossendorf, PO Box 510119, 01314 Dresden, Germany
- J-XI.2 14:30-14:45 CONTROLLING THE DENSITY DISTRIBUTION OF SiC NANOCRYSTALS FOR THE ION BEAM SYNTHESIS OF BURIED SiC LAYERS IN SILICON, J.K.N. Lindner and B. Stritzker, Universität Augsburg, Institut für Physik, 86135 Augsburg, Germany
- J-XI.3 14:45-15:00 EFFECT OF OXYGEN ON ION-BEAM INDUCED SYNTHESIS OF BURIED SiC LAYER IN SILICON, V.V. Artamonov, M.Ya. Valakh, N.I. Klyui, V.P. Melnik, A.B. Romanyuk, B.N. Romanyuk, V.A. Yuhimchuk, Institute of Semiconductor Physics, 45 pr. Nauki, 252028 Kiev, Ukraine
- J-XI.4 15:00-15:15 NON-LOCAL APPROACH TO MODELING OF NANOCUSTER EVOLUTION IN ION-IMPLANTED LAYERS, V.A. Borodin, RRC Kurchatov Institute, 123182 Moscow, Russia; K.-H. Heinig and B. Schmidt, FZ Rossendorf, P.O.Box 510119, 01314 Dresden, Germany

15:15-15:45

BREAK

SESSION XII - New Phase Formation, Part 2

Chairpersons : C. Lin, Shanghai Inst. of Metallurgy, Chinese Academy of Sciences, Shanghai, China

K. Nordlund, Accelerator Laboratory, University of Helsinki, Finland

- J-XII.1 15:45-16:00 STABILISATION AND PHASE TRANSFORMATION OF HEXAGONAL RARE-EARTH SILICIDES ON $\text{Si}(111)$, A. Vantomme, M.F. Wu, S. Hogg, U. Wahl, W. Deweerdt, H. Pattyn and G. Langouche, Instituut voor Kern- en Stralingsfysika, K.U. Leuven, 3001 Leuven, Belgium, S. Jin and H. Bender, IMEC, 3001 Leuven, Belgium
- J-XII.2 16:00-16:15 MODELLING HIGH-TEMPERATURE CO-IMPLANTATION OF Al^+ AND N^+ IMPLANTATION OF SILICON CARBIDE: THE EFFECTS OF STRESS ON THE IMPLANT AND DAMAGE DISTRIBUTIONS, D.V. Kulikov, Yu.V. Trushin, A.F. Ioffe Physico-Technical Institute of RAS, 26 Polytechnicheskaya str., 19402 St. Petersburg, Russia; R.A. Yankov, U. Kreissig, W. Fukarek, A. Mücklich, W. Skorupa, Institut für Ionenstrahlphysik und Material Forschung, Forschungszentrum Rossendorf e.V., PF 510119, 01314 Dresden, Germany; J. Pezold, Institut für Festkörperelektronik, TU Ilmenau, PF 100565, 98684 Ilmenau, Germany
- J-XII.3 16:15-16:30 POINT DEFECTS-He AND He-He INTERACTION DURING VOID FORMATION INDUCED BY He IMPLANTATION IN SILICON, V. Raineri, S. Coffa, CNR-IMETEM, Catania, Italy; M. Saggio, F. Frisina, SGS-Thomson Italy; S.U. Campisano, INFN and Dip. Fisica Catania, Italy
- J-XII.4 16:30-16:45 STABILITY OF CAVITIES FORMED BY He^+ IMPLANTATION IN SILICON, E. Roqueta, PHASE-CNRS, B.P.20, 23 Rue du Loess, 67037 Strasbourg Cedex 2, France and LMP (Univ. Tours) 16 rue Pierre et Marie Curie, B.P. 7155, 37071 Tours Cedex 2, France; A. Grob, J.J. Grob, J.P. Stoquert, PHASE-CNRS, B.P. 20, 23 Rue du Loess, 67037 Strasbourg Cedex 2, France; R. Jérôme, L. Ventura, LMP (Univ. Tours) 16 rue Pierre et Marie Curie, B.P. 7155, 37071 Tours Cedex 2, France

SYMPOSIUM J

- J-XII.5** *16:45-17:00* **CONTROL OF METALLIC CLUSTER FORMATION IN GLASS BY ION IRRADIATION, E. Valentin^{*,**H. Bernas**} and F. Creuzet^{*,***}, ^{*}Laboratoire CNRS/St. Gobain, 39 quai L. Lefranc, 93303 Aubervilliers, France; ^{**}Centre de Spectrométrie Nucléaire et de Spectrométrie de Masse, CNRS-IN2P3, Bât. 108, 91405 Orsay, France; ^{***}present address: Corning Research Center, Fontainebleau, France**
- J-XII.6** *17:00-17:15* **FABRICATION OF [110]-ALIGNED Si QUANTUM WIRES EMBEDDED IN SiO₂ BY LOW-ENERGY OXYGEN IMPLANTATION, Yukari Ishikawa and N. Shibata, Japan Fine Ceramics Center, 2-4-1 Mutsuno, Atsuta, Nagoya 456-8587, Japan; S. Fukatsu, Department of Pure and Applied Sciences, The University of Tokyo, 3-8-1 Komaba, Meguro-ku, Tokyo 153-8902, Japan**
- J-XII.7** *17:30-17:45* **WAVE-ORDERED NANOSTRUCTURES FORMED ON SOI WAFERS BY REACTIVE ION BEAMS, V.K. Smirnov, D. S. Kibalov, S.A. Krivelevich, P.A. Lepshin, E.V. Potapov, Institute of Microelectronics RAS, 3 Krasnoborskaya street, 150051 Yaroslavl, Russia; R.A. Yankov, W. Skorupa, Institut für Ionenstrahlphysik und Materialforschung, P.O. Box 510119, 01314 Dresden, Germany; V.V. Makarov, A.B. Danilin, Centre for Analysis of Substances, 1/4 Sretensky Blvd., 103045 Moscow, Russia**
- 17:45-17:50* **CLOSING SESSION**

END OF SYMPOSIUM J

SYMPOSIUM J

**SYMPOSIUM J
POSTER SESSIONS**

Wednesday June 17, 1998
Mercredi 17 juin 1998

Afternoon
Après-midi

SESSION VII - Poster Session I
15:30-17:00

- J-VII/P1 **RELAXATIONAL SEGREGATION IN ION-BOMBARDED METAL SILICIDES**, M.G. Stepanova, Institute of Applied Mathematics RAS, Miusskaya sq. 4, 125047 Moscow, Russia
- J-VII/P2 **SILICA FUNCTIONALIZATION BY ION BOMBARDMENT IN REACTIVE ATMOSPHERE. I. CO₂ ADDITION**, G.F. Cerofolini, SGS - THOMSON Microelectronics, 20041 Agrate MI, Italy
- J-VII/P3 **SILICA FUNCTIONALIZATION BY ION BOMBARDMENT IN REACTIVE ATMOSPHERE. II. C₂H₄ ADDITION**, G.F. Cerofolini, SGS - THOMSON Microelectronics, 20041 Agrate MI, Italy
- J-VII/P4 **MECHANISM OF ANOMALOUS DIFFUSION OF ION-IMPLANTED PHOSPHORUS IN SILICON**, A.R. Chelyadinskii, V.A. Burenkov, Byelorussian State University, Pr. F.Skarina 4, 220050 Minsk, Belarus
- J-VII/P5 **DEFECT FORMATION IN SILICON WAFER SURFACE LAYER AND ITS INFLUENCE ON THE BULK PROPERTIES**, K.L. Enisherlova, T.F. Rusak, Sc. & R Institute «Pulsar», St. Okrurnoi proezd 27, Moscow, Russia, G.K. Ippolitova, T.M. Tkacheva, G.N. Petrov, ELLINA-NT, R & D Co., 38 St. Vavilova, Moscow, Russia
- J-VII/P6 **OSCILLATIONS OF CRITICAL NUCLEUS DURING HIGH-TEMPERATURE ION IMPLANTATION IN CRYSTALLINE LATTICE**, G.V. Gadiyak, Institute of Computational Technologies, Russian Academy of Sciences, Siberian Division, Prospekt Lavrentjeva 6, 630090 Novosibirsk, Russia
- J-VII/P7 **THE FORMATION OF COPPER IONS WITH DIFFERENT VALENCE STATES IN CuO UNDER Li⁺-DOPING, IRRADIATION AND PLASTIC DEFORMATION: SOFT X-RAY EMISSION STUDY**, D.A. Zatsepin, V.R. Galakhov, B.A. Gishzevski, E.Z. Kurmaev, S.V. Naumov, Institute of Metal Physics, 620219 Ekaterinburg GSP-170, Russia
- J-VII/P8 **INTERACTIONS BETWEEN IMPURITIES (B AND F) AND SECONDARY DEFECTS IN LOW ENERGY BF₂-IMPLANTED Si**, M. Tamura and Y. Hiroyama, JRCAT-ATP, 1-1-4 Higashi, Tsukuba, Ibaraki 305, Japan and A. Nishida, Central Research Laboratory, Hitachi Ltd., Kokubunji, Tokyo 185, Japan
- J-VII/P9 **FORMATION OF SiO₂ PHASE IN SILICON ENHANCED BY MICROCAVITIES AND POLYVACANCIES**, A.A. Efremov, V.G. Litovchenko, Institute of Semiconductor Physics, 45 Prospekt Nauki, Kiev 252650, Ukraine
- J-VII/P10 **NON-LINEAR PHASE TRANSFORMATIONS IN SiO₂ FILMS INDUCED BY O₂⁺ ION IMPLANTATION**, A.A. Efremov, G.P.H. Romanova, Institute of Semiconductor Physics, 45 Prospekt Nauki, Kiev 252650, Ukraine
- J-VII/P11 **THERMAL STRESS RESISTANCE OF ION IMPLANTED MgO AND SAPPHIRE CRYSTALS**, V. Gurarie, D. Jamieson, R. Szymanski, A. Orlov, School of Physics, MARC, University of Melbourne, Melbourne, Australia; J. Williams, M. Conway, Department of Electronic Materials Engineering, Research School of Physical Sciences and Engineering, ANU, Canberra, Australia
- J-VII/P12 **INFLUENCE OF ARGON AND -HYDROGEN IONS ENERGY ON THE STRUCTURE OF α-Si:H PREPARED BY ION-BEAM-ASSISTED EVAPORATION**, H. Rinnert, M. Vergnat, G. Marchal, Laboratoire de Physique des Matériaux, (U.M.R. au C.N.R.S. No.7556), Université Henri Poincaré Nancy I, B.P. 239, 54506 Vandoeuvre-lès-Nancy Cedex, France; A. Burneau, Laboratoire de Chimie Physique pour l'Environnement, (U.M.R. au C.N.R.S. No.7564), Université Henri Poincaré Nancy I, 405 rue de Vandoeuvre, 54506 Villers-lès-Nancy Cedex, France
- J-VII/P13 **ION IMPLANTATION AS A METHOD FOR INCREASING PERFORMANCE OF DIAMOND PHOTODETECTORS**, A.G. Zacharov, V.S. Varichenko, HEI&FD Lab., Belarussian State University, 220080 Minsk, Belarus, and A.M. Zaitsev, LGBE, Fern Universität Hagen, 58084 Hagen, Germany
- J-VII/P14 **ESR OF SILICON IMPLANTED WITH 5.68 GeV Xe IONS**, N.M. Lapchuk, E.N. Shumskaya, V.S. Varichenko, HEI&FD Lab., Belarussian State University, 220080 Minsk, Belarus

SYMPOSIUM J

- J-VII/P15** DWELL-TIME DEPENDENCE OF THE DEFECT ACCUMULATION IN FOCUSED ION BEAM SYNTHESIS OF CoSi₂, L. Bischoff, S. Hausmann, M. Voelskow and J. Teichert, Research Center Rossendorf Inc., P.O.Box 510119, 01314 Dresden, Germany
- J-VII/P16** COMPARATIVE STUDY OF ION IMPLANTATION CAUSED DAMAGE DEPTH PROFILES IN POLYCRYSTALLINE AND SINGLE CRYSTALLINE SILICON STUDIED BY SPECTROSCOPIC ELLIPSOMETRY AND RUTHERFORD BACKSCATTERING SPECTROMETRY, P. Petrik, O. Polgar, T. Lohner, M. Fried, N.Q. Khanh, J. Gyulai, Research Institute for Technical Physics and Materials Science, P.O.B. 49, 1525 Budapest, Hungary; W. Lehnert, C. Schneider, H. Ryssel* Fraunhofer-Institut für Integrierte Schaltungen, Schottkystrasse 10, 91058 Erlangen, Germany; *Lehrstuhl für Elektronische Bauelemente, Friedrich-Alexander-Universität Erlangen-Nürnberg, Cauerstrasse 6, 91058 Erlangen, Germany
- J-VII/P17** INVESTIGATION OF IONIC IMPLANTATION EFFECTS IN KTiOPO₄ (KTP) WAVEGUIDES BY REFLECTION SECOND HARMONIC GENERATION TECHNIQUE, P. Bindner, A. Boudrioua and J.C. Loulergue, MOPS-CLOES, Université de Metz et Supélec, Metz, France; P. Moretti, LPCML, URA CNRS 442, Université Claude Bernard-Lyon I, France; F. Laurell, Department of Physics, Royal Institute of Technology, Stockholm, Sweden
- J-VII/P18** INFLUENCE OF AR⁺ IONS SPUTTERING ON THE CHEMICAL COMPOSITION OF SOME XEROGELS BASED ON VANADIUM OXIDES, Y. Bondarenko, H. Tvardauskas, S. Grebinskij, Z. Martunas, S. Mickevicius, Semiconductor Physics Institute, A.Gostauto 11, 2600 Vilnius, Lithuania
- J-VII/P19** INVESTIGATION OF THE GETTERING OF IRON AND OXYGEN AT CAVITIES FORMED BY HELIUM ION IMPLANTATION IN CZ AND FZ SILICON, J.R. Kaschmy, Instituto de Física, and P.F.P. Fichtner, Departamento de Metalurgia - UFRGS, 91501-970 Porto Alegre, Brasil; R.A. Yankov, W. Fukarek, A. Mücklich and W. Skorupa, Forschungszentrum Rossendorf, 01314 Dresden, Germany; A.B. Danilin, Centre for Analyses of Substances, 1 Eleatrodnyaya Str., 111542 Moscow, Russia
- J-VII/P20** IS THERE ANY IMPORTANT DEFECT LIFE AWAY FROM THE PEAK IN THE NUCLEAR ENERGY DEPOSITION PROFILE?, R. Köglér, R.A. Yankov and W. Skorupa, Institute of Ion Beam Physics and Materials Research, Forschungszentrum Rossendorf e.V., POB 510119, 01314 Dresden, Germany
- J-VII/P21** HYDROGEN TRAPPING AT ION IMPLANTATION DEFECTS IN MgO, A. van Veen, H. Schut, A.V. Fedorov, IRI, Delft University of Technology, Mekelweg 15, 2629 JB Delft, The Netherlands; E.A.C. Neef, R.J.M. Konings, ECN, P.O. Box 1, 1755 ZG Petten, The Netherlands, and B.J. Kooi, J.Th.M. de Hosson, Materials Science Centre, University Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands
- J-VII/P22** CHARACTERIZATION AND SURFACE CRYSTALLIZATION OF AMORPHOUS Si_{1-x}Ge_x INDUCED BY Ge ION IMPLANTATION INTO Si (100) SUBSTRATE, G. Peto, J. Kanski*, Z.F. Horvath, J. Gyulai, MTA Research Institute for Technical Physics and Materials Science, 1525 Budapest, P.O.Box 49, Hungary; *Physics Department of Chalmers Univ. of Technology, 41296 Göteborg, Sweden
- J-VII/P23** A NOVEL (SiC)_{1-x}(AlN)_x COMPOUND SYNTHESIZED USING ION BEAMS, J. Pezoldt, Institut für Festkörperelektronik, TU Ilmenau, PF 100565, 98684 Ilmenau, Germany; R.A. Yankov, A. Mücklich, W. Fukarek, H. Reuther, W. Skorupa, Institut für Ionenstrahlphysik und Material Forschung, Forschungszentrum Rossendorf e.V., PF 510119, 01314 Dresden, Germany
- J-VII/P24** MODIFICATION OF FREE CARRIERS CONCENTRATION IN ION-IMPLANTED SEMICONDUCTORS AS REVEALED BY INFRARED REFLECTIVITY, P. Lévesque and A. Declémy, Laboratoire de Métallurgie Physique, UMR 6630 CNRS, Université de Poitiers, BP 179, 86960 Futuroscope Cedex, France
- J-VII/P25** NANOHARDNESS AND STRUCTURE OF NITROGEN IMPLANTED Si₃Al₂ COATINGS POST-IMPLANTED WITH OXYGEN, M. Jacobs, F. Bodart, D. Schryvers*, A. Poulet**, LARN, FUNDP, 22 Rue Muzet, 5000 Namur, Belgium; *EMAT, University of Antwerp, RUCA, 171 Groenenborgerlaan, 2020 Antwerpen, Belgium; **FPMS, 56 Rue de l'Épargne, 7000 Mons, Belgium
- J-VII/P26** ION BEAM MIXING OF METALS WITH SILICA, G. Rizza, J.C. Pivin, C.S.N.S.M., Bâtiment 108, 91405 Orsay Campus, France
- J-VII/P27** As - Al RECOIL IMPLANTATION THROUGH Si₃N₄ BARRIER LAYER, P. Godignon, E. Morvan, J. Montserrat, X. Jordá, D. Flores, J. Rebollo, Centro Nacional de Microelectrónica (CNM-CSIC), Campus UAB, 08193 Bellaterra, Spain
- J-VII/P28** POLYMODALITY OF SIZE DISTRIBUTION FUNCTION OF Si NANOCCLUSERS IN SiO₂, I.V. Blonskij, B.I. Lev, Institut of Physics, Ukrainian Academy of Sciences, pr. Nauki 46, 252028 Kiev, Ukraine
- J-VII/P29** AFM AND STM INVESTIGATION OF CARBON NANOTUBES PRODUCED BY HIGH ENERGY ION IRRADIATION OF GRAPHITE, L.P. Biro*, G.I. Mark & J. Gyulai, Research Institute for Technical Physics & Materials Science, 1525 Budapest, P.O.B. 49, Hungary; K. Havancsak, Eotvos University, 1088, Muzeum Krt. 6-8, Hungary; S. Lipp**, Ch. Lehrer, L. Frey & H. Ryssel, FhG-Institut für Integrierte Schaltungen IIS-B, 91058 Erlangen, Schottkystr. 10, Germany; *FUNDP, 5000 Namur, Rue de la Bruxelles 61, Belgium; **FEI-Europe GmbH, Bretonischer Ring 16, 85630 Grasbrunn, Germany

SYMPOSIUM J

- J-VII/P30 *FORMATION OF COMPLEX Al-N-C LAYER IN ALUMINIUM BY SUCCESSIVE CARBON AND NITROGEN IMPLANTATION, V.V. Uglov, N.N. Cherenda, V.V. Khodasevich, Belarussian State University, pr. F. Scoriny 4, 220080 Minsk, Belarus; V.A. Sokol, I.I. Ahmnov, A.L. Danilyuk, Belarussian State University of Informatics and Radioelectronics, P. Browka 6, 220027 Minsk, Belarus; A. Wenzel, J. Gerlach, B. Rauschenbach, University of Augsburg, Institute of Physics, Memminger Str. 6, 86135 Augsburg, Germany*
- J-VII/P31 *ION-BEAM MODIFICATION OF α -SiO₂ and Ni/SiO₂-BILAYERS, M. Schwickert, W. Bolse, M. Gustafsson*, J. Keinonen*, K.P. Lieb, Universität Göttingen, II. Physikalisches Institut and Sonderforschungsbereich 345, Bunsenstrasse 7-9, 37073 Göttingen, Germany; *University of Helsinki, Accelerator Laboratory, P.O. Box 43, 00014 Helsinki, Finland*
- J-VII/P32 *Ge ION IMPLANTATION FOR THE FORMATION OF Si/Ge₁₋₃₇ HETEROJUNCTION BIPOLAR TRANSISTORS, S. Lombardo, V. Privitera, and S.U. Campisano, CNR-IMETEM, Strada 50, 95121 Catania, Italy; A. Pinto and P. Ward, SGS-THOMSON, Catania, Italy*

SYMPOSIUM J

Wednesday June 17, 1998
 Mercredi 17 juin 1998

Afternoon
 Après-midi

SESSION VIII - Poster Session II
 17:00-18:30

- J-VIII/P1 *COMPARATIVE STUDY OF ION IMPLANTATION CAUSED ANOMALOUS SURFACE DAMAGE IN SILICON STUDIED BY SPECTROSCOPIC ELLIPSOMETRY AND RUTHERFORD SPECTROMETRY, T. Lohner, M. Fried, Q. Khanh, Research Institute for Technical Physics and Materials Science, 1525 Budapest, P.O.B. 49, Hungary; H. Wormeester, Faculty of Applied Physics, University of Twente, PO Box 217, 7500 AE Enschede, The Netherlands; M.A. El-Sherbiny, Faculty of Science, Al-Azhar University, Cairo, Egypt*
- J-VIII/P2 *ION ASSISTED METALLISATION OF OXIDES BY IONIZED CLUSTER BEAMS, ELECTRICAL CONTACTS WITH HIGH ADHESION TO HTSC FILMS, A.S. Zolkin, Novosibirsk State University, 630090 Novosibirsk, Russia; A.V. Koshin and Yu. G. Shukhov, Institute of Laser Physics, 630090 Novosibirsk, Russia*
- J-VIII/P3 *RESIDUAL DEFECTS IN CZ-SILICON AFTER SELF-IMPLANTATION AND ANNEALING FROM 400°C TO 700°C, D.C. Schmidt*, B.G. Svensson**, J.F. Barbot*, C. Blanchard*, E. Ntsoenzok***, and S. Godey***, *Laboratoire de Métallurgie Physique, UMR 6630 CNRS, Faculté des Sciences, SP2MI, Bd3 Téléport 2, 86960 Futuroscope Cedex, France; **Department of Electronics, Royal Institute of Technology, Electrum 229, 16440 Kista-Stockholm, Sweden; ***CNRS-CERI, 3A rue de la Ferrollerie, 45071 Orléans Cedex, France*
- J-VIII/P4 *LOW FREQUENCY NOISE IN As IMPLANTED SILICIDES, M.M. Stojanovic, VINCA Institute of Nuclear Sciences, PO Box 522, 11001 Beograd, Yugoslavia*
- J-VIII/P5 *MEASURING THE GENERATION LIFETIME PROFILE MODIFIED BY MeV H⁺ ION IMPLANTATION IN SILICON, N.Q. Khanh, Cs. Kovacsics*, T. Mohacsy, M. Adam, and J. Gyulai, KFKI Research Institute for Technical Physics and Materials Science, P.O.B. 49, 1525 Budapest, Hungary, *SEMILAB, Semiconductor Physics Laboratory RT, P.O.B. 18, 1327 Budapest, Hungary*
- J-VIII/P6 *H⁺-IMPLANTATION EFFECTS ON THE ELECTRO-OPTIC COEFFICIENTS OF LiNbO₃, OPTICAL PLANAR WAVEGUIDE: DOSE INFLUENCE, A. Boudrioua, J.C. Loulergue, MOPS-CLOES, Université de Metz et Supélec, 57078 Metz, France; S. Ould. Salem, P. Moretti, LPCML, Université Claude Bernard Lyon I, 69622 Villeurbanne Cedex, France*
- J-VIII/P7 *HIGH RESOLUTION EFTEM STUDY OF ION BEAM SYNTHESIS NICKEL SILICIDES, M.N. Yu, J.Y. Hsu, J.H. Liang, F.R. Chen, J.J. Kai, and L.C. Chen, Department of Engineering and System Science, National TsingHua University, Hsinchu, Taiwan 30043, R.O.C*
- J-VIII/P8 *BEHAVIOR OF IMPLANTED OXYGEN AND NITROGEN IN PULSE PHOTON ANNEALED SILICON, A.I. Belogorokhov, State Institute for Rare Metals, 5 B.Tolmachevsky per., 109017 Moscow; V.T. Bublik, K.D. Scherbachev, Y.N. Parkhomenko, Moscow Steel and Alloys Institute, 4 Leninsky Prospekt, 117936 Moscow; V.V. Makarov, A.B. Danilin, Centre for Analysis of Substances, 1/4 Sretensky Blvd., 103045 Moscow, Russia*
- J-VIII/P9 *EXTENDED DEFECTS IN Si WAFERS IMPLANTED BY IONS OF RARE-EARTH ELEMENTS, V.I. Vdovin, M.G. Mil'vidskii, Institute for Chemical Problems of Microelectronics, B. Tolmachevskii per. 5, Moscow 109017, Russia; T.G. Yugova, Institute of Rare Metals, B. Tolmachevskii per. 5, Moscow 109017, Russia; N.A. Sobolev, Ioffe Physico-technical Institute, Polytechnicheskaya 26, St.Petersburg 194021, Russia*
- J-VIII/P10 *MONTE CARLO SIMULATIONS OF Si PRECIPITATION IN Si-IMPLANTED SILICON DIOXIDE, A.F. Leier, L.N. Safronov, G.A. Kachurin, Inst. Semiconductor Physics, Novosibirsk 90, Russia*
- J-VIII/P11 *THERMAL REDISTRIBUTION OF IMPLANTED Al IN Si: EVIDENCES FOR INTERACTIONS WITH EXTENDED DEFECTS, Ch. Ortiz*, J.J. Grob*, D. Mathiot*, A. Claverie and R. Jérôme**, CEMES-CNRS, 29 rue J. Marvig, 31055 Toulouse Cedex, France; *PHASE-CNRS, 23 rue du Loess, BP 20, 67037 Strasbourg Cedex 2, France; **LMP (Univ. Tours), 16 rue P. et M. Curie, BP 7155, 37071 Tours Cedex 2, France*
- J-VIII/P12 *ELECTRON MICROSCOPY AND ELECTROPHYSICAL INVESTIGATIONS OF THERMOINDUCED PROCESSES IN Ag-Cu₂Ni_{1-x-y}Co₂Mn_{2-y}O₄ SYSTEM, L.V. Hadzaman, M.M. Kravtsov, Non-Linear Sensors Laboratory, Drohobych State Pedagogical Institute, 24 Iv. Franko Str., 293720 Drohobych, Lviv Region, Ukraine, O.Y. Mrooz and O.I. Shpotyuk, Institute of Materials, 202 Stryjska Str., 290031 Lviv, Ukraine*

SYMPOSIUM J

- J-VIII/P13 **LIGHT PARTICLE IRRADIATION EFFECTS IN Si NANOCRYSTALS**, G.A. Kachurin, S.G. Yanovskaya, K.S. Zhuravlev, A.K. Gutakovskiy, Institute of Semiconductor Physics, 630090 Novosibirsk, Russia, M.O. Ruault, CSNSM, 91405 Orsay Campus, France
- J-VIII/P14 **PECULIARITIES OF DEFECT GENERATION IN Si-IMPLANTED GaAs (211) WAFERS**, S.B. Evgeniev, A.A. Kalinin, M.G. Mi'vidskii, Institute for Chemical Problems of Microelectronics, B.Tolmachevsky per. 5, 109017 Moscow, Russia, V.T. Bublik, A.W. Nemirovskii, Moscow State Steel and Alloys Institute, Leninskii pr.4, 117571 Moscow, Russia
- J-VIII/P15 **THE COMPARISON OF OPTICAL AND PHOTOLUMINESCENCE PROPERTIES OF SiO₂ LAYERS IMPLANTED WITH SILICON AND SILICON+PHOSPHORUS AT HIGH DOSES**, D.L. Tetelbaum, O.N. Gorshkov, E.S. Demidov, S.A. Trushin, M.V. Stepihova, Physico-Technical Research Institute of University of Nizhni Novgorod, Gagarin prosp., 23/3, 603600 Nizhni Novgorod, Russia
- J-VIII/P16 **ION IMPLANTATION OF Be AND Se INTO GaAs(100) AT GRAZING INCIDENCE**, A.A. Dzhrakhalov and I.I. Khafizov, Institute of Electronics, 700143 Tashkent, Uzbekistan
- J-VIII/P17 **INFLUENCE OF ION BEAM CURRENT DENSITY ON PHASE FORMATION OF CoSi₂ BURIED LAYERS**, Yu.N. Parkhomenko, K.D. Chicherbatchev, A.A. Galaev, A.B. Danilin, Moscow State Institute of Steel and Alloys, 4 Leninskii Pr., 117936 Moscow, Russia and A. Perez-Rodriguez, A. Romano-Rodriguez, A. Dieguez, J.R. Morante, Universitat de Barcelona, A.Diagona 1 645-647, 08028 Barcelona, Spain
- J-VIII/P18 **LATTICE LOCATION AND ANNEALING BEHAVIOUR OF PT AND W IMPLANTED SAPPHIRE**, E. Alves, R.C. Silva, M.F. da Silva, J.C. Soares*, Instituto Tecnológico e Nuclear, Estrada Nacional 10, 2685 Sacavém, Portugal; *CFNUL, Univ. Lisboa, Av. Prof. GamaPinto 2, 1699 Lisboa, Portugal
- J-VIII/P19 **MICROGETTERING OF PLATINUM IN PROTON IRRADIATED SILICON**, D.C. Schmidt**, B.G. Svensson**, J.F. Barbot*, C. Blanchard*, E. Ntsenzok***, S. Godey***, and N. Kesitalo**, *Laboratoire de Métallurgie Physique UMR 6630 CNRS, Faculté des Sciences, SP2MI, Bd3 Téléport 2, 86960 Futuroscope Cedex, France, **Department of Electronics, Royal Institute of Technology, Electrum 229, 16440 Kista-Stockholm, Sweden, ***CNRS-CERI, 3A, rue de la Férollerie, 45071 Orléans Cedex, France
- J-VIII/P20 **EPR STUDY OF a-Si STRUCTURAL RELAXATIONS**, B. Pivac, B. Rakvin, R. Bošković Institute, P.O.Box 1016, 10000 Zagreb, Croatia and R. Reitano, Istituto Nazionale di Fisica della Materia-Unitati Catania, Corso Italia 57, 95129 Catania, Italy
- J-VIII/P21 **PD-DIFFUSION IN ZnTe AND CdTe**, S. Hermann, H.-E. Mahnke, B. Spellmeyer, HMI Berlin GmbH, 14109 Berlin, M. Wienecke, B. Reinhold, HU Berlin, Institut für Physik, 10115 Berlin, Germany; R.A. Yankov, FZ Rossendorf, 01314 Dresden, Germany and H.-E. Gumlich, TU Berlin, Institut für Festkörperphysik, 10623 Berlin, Germany
- J-VIII/P22 **ELECTRICAL AND OPTICAL PROPERTIES OF a-Si_{1-x}C_xH ALLOYS AFTER Co⁺ ION IMPLANTATION**, B. Sealy, R. Gwilliam, J. Shannon, C. Teynes, Depart. of Elect. and Electrical Engineering, University of Surrey, Guildford, Surrey, UK; T. Tsvetkova, Inst. Solid State Phys., Bulg. Acad. Sci., N.Tzenov and D. Dimova-Malinovska CLSENES, Bulg. Acad. Sci., 1784 Sofia, Bulgaria
- J-VIII/P23 **SYNTHESIS OF SINGLE-CRYSTALLINE AL LAYERS IN SAPPHIRE**, W. Schlosser, J.K.N. Lindner, M. Zeitler and B. Stritzker, Institut für Physik, Universität Augsburg, 86135 Augsburg, Germany
- J-VIII/P24 **MODIFICATION OF SOLIDS AND SELF-ORGANIZING PROCESSES INDUCED BY LOW-ENERGY ION IRRADIATION**, I.V. Tereshko, V.I. Khodyrev, A.A. Russian, J.V. Rimkevich, D.L. Vinogradov, Mechanical Engineering Institute, 212005 Mogilev, Belarus.
- J-VIII/P25 **ELECTROCATALYSIS OF OXYGEN REDUCTION ON ELECTROCERAMICS BY IMPLANTED TRANSITION METALS**, A.J. McEvoy, J. Van Herle, S. Widmer* and T. Tate**, Laboratory for Photonics and Interfaces, Department of Chemistry, Ecole Polytechnique Fédérale de Lausanne, 1015 Lausanne, Switzerland; *Forschungszentrum Jülich, Germany; **Imperial College, London, UK

SYMPOSIUM J

- J-VIII/P26 *STABILITY STUDIES OF Hg IMPLANTED YBCO THIN FILMS*, J.P. Araujo, V.S. Amaral, J.B. Sousa, Dep. Fisica, FCUP, Rua do Campo Alegre 687, 4150 Porto, Portugal; A.A. Lourenço, INESC, Rua Campo Alegre 687, 4150 Porto, and Dep. Fisica, FCUA, 3800 Aveiro, Portugal; E. Alves, J.G. Marques, J.C. Soares, CFNUL, Av. Prof. Gama Pinto 2, 1699 Lisboa Codex, Portugal; A. Vantomme, U. Wahl, University of Leuven, Instituut voor Kern-en Stralingsfysica, Celestijnenlaan 200 D, 3001 Leuven, Belgium; V. Galindo, T. Papen, J.P. Senateur, F. Weiss, UMR CNRS 5628, INPG-ENSPG, BP 46, 38402 St. Martin D'Hères Cedex, France; J.G. Correia and the ISOLDE Collaboration, CERN, 1211 Genève 23, Switzerland
- J-VIII/P27 *MODIFICATION OF A POST-IMPLANTATION DEFECT ACTIVITY FOR PHOTOVOLTAIC CONVERSION*, Z.T. Kuznicki, CNRS, Laboratoire PHASE (UPR 292), BP 20, 67037 Strasbourg Cedex 2, France
- J-VIII/P28 *INVESTIGATIONS OF ION BEAM MIXING EFFECTS IN Ta THIN FILMS ON Si SUBSTRATES*, N. Bibic, M. Milosavljevic, D. Peruvsko, VINCA Institute of Nuclear Sciences, 11001 Belgrade, P.O. Box 522, Yugoslavia; and C. Jeynes, Dept. of Electronic and Electrical Eng. University of Surrey, Guildford, Surrey GU2 5XH, UK
- J-VIII/P29 *FORMATION OF THIN SILICON NITRIDE LAYERS ON Si BY LOW ENERGY N₂⁺ ION BOMBARDMENT*, V.I. Bachurin, A.B. Churilov, E.V. Potapov, V.K. Smirnov, Institute of Microelectronics of RAS, Krasnoborskayastr. 3, 150051, Yaroslavl, Russia; V.V. Makarov, A.B. Danilin, Center for Analysis of Substances, 1/4 Sretensky Blvd, 103045 Moscow, Russia
- J-VIII/P30 *ANOMALOUS FIELD DEPENDENCE OF DEEP LEVEL EMISSION IN PROTON IRRADIATED SILICON*, N. Keskitalo, A. Hallen, P. Pellegrino, and B. Svensson, Royal Institute of Technology, Dept. of Electronics, P.O. Box E229, 16440 Kista-Stockholm, Sweden
- J-VIII/P31 *GROWTH AND CHARACTERIZATION OF Ge NANOCRYSTALS*, S. Guha, Naval Research Laboratory, Washington DC., USA, and L.L. Chase, Lawrence Livermore National Laboratory, Livermore CA, USA
- J-VIII/P32 *EFFECT OF BF₃⁺ IMPLANTATION ON THE STRAIN-RELAXATION OF PSEUDOMORPHIC METASTABLE Ge_{0.00}Si_{0.94} ALLOY LAYERS*, M.S. Oh, S. Im, and J.H. Song*, Department of Metallurgical Engineering, School of Materials Science and Engineering, Yonsei University, Seoul, 120-749, Korea; *Advanced Analysis Center, Korea Institute of Science and Technology, Seoul, 130-650, Korea

E-MRS'98 SPRING MEETING



SYMPOSIUM K

Carbon-based Materials for Microelectronics

Symposium Organizers

J. FINK	IFW Dresden, Dresden, Germany
J. ROBERTSON	Cambridge University, Cambridge, UK
E. KOHN	Universität Ulm, Ulm, Germany
D. WALTON	University of Sussex, Brighton, UK

SYMPOSIUM K

Tuesday June 16, 1998
Mardi 16 juin 1998

Morning
Matin

SESSION I - Nano-Graphite, Fullerenes

Chairperson: M. Knupfer, *Inst für Festkörper- und Werkstofforschung, Dresden, Germany*

- K-I.1 9:00-9:30 - Invited - GIANT POLYCYCLIC AROMATIC HYDROCARBONS AS NANOSCOPIC GRAPHITE MODELS, A.J. Berresheim, J.-D. Brand, C.G. Fouracre, S. Ito, M. Wehmeier, K. Müllen, *Max-Planck-Institute für Polymerforschung, Ackermannweg 10, 55128 Mainz, Germany*
- K-I.2 9:30-9:50 ORGANIC PHOTOCONDUCTORS FOR XEROGRAPHY, C. Schlebusch, J. Morenzin, B. Kessler, and W. Eberhardt, *Forschungszentrum Jülich GmbH, Institut für Festkörperforschung, 52425 Jülich, Germany*
- K-I.3 9:50-10:10 Gd-L_{III} EXAFS STUDY OF Gd@C₈₂, H. Gieffers, F. Nessel, M. Strecker, G. Wortmann, *Universität Paderborn, FB Physik, 33095 Paderborn, Germany* and Yu.S. Grushko, E.G. Aleseev, V.S. Kozlov, *St. Petersburg Nuclear Physics Institute, Gatchina 188350, Russia*
- K-I.4 10:10-10:30 VIBRATIONAL CHARACTERISATION OF THREE TM@C₈₂ ISOMERS, M. Krause, P. Kuran, A. Barth, L. Dunsch, *Institut für Festkörper- und Werkstofforschung Dresden, Helmholtzstr. 20, 01171 Dresden, Germany*

10:30-11:00

BREAK

SESSION II - Fullerenes, Nanotubes

Chairperson: C. Dekker, *Delft University and DIMES, Delft, The Netherlands*

- K-II.1 11:00-11:20 C₆₀ THIN FILMS ON Ag(001) : AN STM STUDY, E. Giudice, E. Magnano*, S. Rusponi, C. Boragno, G. Costantini and U. Valbusa, *Centro di Fisica delle Superfici e Basse Temperature - CNR and INFN, Unita' di Genova, via Dodecaneso 33, 16146 Genova, Italy, *Laboratorio TASC-INFN, Padriciano 99, 34012 Trieste, Italy*
- K-II.2 11:20-11:40 RELATIVE STABILITIES OF ISOMERIC CAGES: IPR-, NON-IPR-, PSEUDO-FULLERENES, Z. Slania, X. Zhao and F. Osawa, *Laboratories of Computational Chemistry & Fullerene Science, Department of Knowledge-Based Information Engineering, Toyohashi University of Technology, Toyohashi 441-8580, Japan*
- K-II.3 11:40-12:00 - Invited - SHEETS, CONES & TUBES, T.W. Ebbesen, *ISIS, Louis Pasteur University, 4 rue B. Pascal, 67000 Strasbourg, France* and NEC Research Institute, *4 Independence Way, Princeton NJ 08540, USA*
- K-II.4 12:10-12:30 - Invited - DESIGN OF CARBON NANOSTRUCTURES TOWARD NEW MICROELECTRONICS, S. Saito, *Department of Physics, Tokyo Institute of Technology, Meguro-ku, Tokyo 152, Japan*

12:30-14:00

LUNCH

SYMPOSIUM K

Tuesday June 16, 1998

Mardi 16 juin 1998

Afternoon

Après-midi

SESSION III - Nanotubes II

Chairperson: T.W. Ebbesen, *ISIS, Louis Pasteur University, Strasbourg, France*

- K-III.1 14:00-14:30 - Invited - CARBON NANOTUBES AS MOLECULAR QUANTUM WIRES, C. Dekker, *Delft University of Technology, Department of Applied Physics and DIMES, Lorentzweg 1, 2628 CJ Delft, The Netherlands*
- K-III.2 14:30-14:50 PROCESSING OF SINGLE-WALL CARBON NANOTUBES FOR NANO-ELECTRONIC APPLICATION, Y. Zhang, S. Iijima, *NEC, 34 Miyukigaoka, Tsukuba, Ibaraki 305-8501, Japan* and E. Landree, *Northwestern University, 2225 N. Campus Drive, Evanston IL 60208, USA*
- K-III.3 14:50-15:20 - Invited - ELECTRONIC STRUCTURE STUDIES OF UNDOPED AND POTASSIUM DOPED SINGLE WALL NANOTUBES, M. Knapf, T. Pichler, *M.S. Golden and J. Fink, Institut für Festkörper- und Werkstofforschung Dresden, 01171 Dresden, Germany*; A. Rinzler and R.E. Smalley, *CNST, Rice Quantum Institute, Rice University, Houston, Tx 77251, USA*
- K-III.4 15:20-15:40 ELECTRONIC PROPERTIES OF CHEMICALLY DOPED SINGLE WALL CARBON NANOTUBES, P. Petit, E. Jouguelet, C. Mathis, *J.E. Fischer*, A.G. Rinzler** and R.E. Smalley**, Institut Charles Sadron, CNRS, 67083 Strasbourg, France*; *LRSM, *Univ. of Pennsylvania, Philadelphia 19104-6272, USA*; **Center for Nanoscale Science and Technology, *Rice Univ., Houston Texas 77251, USA*
- 15:40-16:10 BREAK

SESSION IV - Nanotubes III, Applications

Chairperson: P. Petit

- K-IV.1 16:10-16:30 SCANNING PROBE METHOD INVESTIGATION OF CARBON NANOTUBES PRODUCED BY HIGH ENERGY ION IRRADIATION OF GRAPHITE, L.P. Biro*, *G.I. Mark and J. Gyulai, Research Institute for Technical Physics and Materials Science, 1525 Budapest, POB. 49, Hungary*; B. Szabo**, *J. Kürti and N. Rozlosnik, Eötvös University, 1088, Puskin u. 5, Hungary*; L. Frey and H. Ryssel, *FhG-Institut für Integrierte Schaltungen IIS-B, 91058 Erlangen, Schottkystr. 10, Germany*, * FUVDP, *5000 Namur, Rue de la Bruxelles 61, Belgium*, ** Research Institute for Technical Physics & Materials Science, *1525 Budapest, POB. 49, Hungary*
- K-IV.2 16:30-16:50 TECHNICAL AND ECONOMICAL FEASIBILITY OF CARBON NANOFIBER BASED H₂-STORAGE SYSTEMS, W. Schütz, H. Klos, *Mannesmann Pilotentwicklung, Chiemgaustr. 116, 81549 München, Germany*; G. Reichenauer, *P. Lamp, ZAE, Am Hubland, 97074 Würzburg, Germany*; L. Jörissen, *ZSW, Helmholtzstr. 8, 89081 Ulm, Germany*; V. Trapp, *SGL Technik GmbH, W.-v.-Siemens-Str. 18, 86405 Meitingen, Germany*
- K-IV.3 16:50-17:10 ELECTRONIC AND FIELD EMISSION PROPERTIES OF CARBON NANOTUBES, J.C. Charlier, *Unité de Physico-Chimie et de Physique des Matériaux, Université Catholique de Louvain, Place Croix du Sud 1, 1348 Louvain-la-Neuve, Belgium*

SYMPOSIUM K

Wednesday June 17, 1998
Mercredi 17 juin 1998

Afternoon
Après-midi

SESSION V - Fieldemission

Chairperson: E. Kohn, *University of Ulm, Germany*

- K-V.1 14:00-14:30 - Invited - *FIELD EMISSION DISPLAYS FROM DIAMOND LIKE CARBON, W.I. Milne and J. Robertson, Engineering Department, Cambridge University, Trumpington Street, Cambridge CB2 1PZ, UK*
- K-V.2 14:30-15:00 - Invited - *FIELD EMISSION FROM DIAMOND, DIAMOND-LIKE AND NANO-STRUCTURED CARBON FILMS, O.M. Küttel, O. Gröning, L. Nilsson, and L. Schlapbach, University of Fribourg, Physics Department, Péroilles, 1700 Fribourg, Switzerland*
- K-V.3 15:00-15:20 *FIELD EMISSION OF NITROGENATED AMORPHOUS CARBON FILMS, U. Hoffmann, A. Weber and C.-P. Klages, Fraunhofer-Institute for Surface and Thin Film Technology, Bienroder Weg 54e, 38108 Braunschweig, Germany*
- K-V.4 15:20-15:40 *MODEL FOR EMISSION FROM DIAMOND AND DIAMOND-LIKE CARBON, J. Robertson, Engineering Dept, Cambridge University, Cambridge CB2 1PZ, UK*
- 15:40-16:10 BREAK
- POSTER SESSION I
- 16:10-18:30 *See programme of this poster session p. K-7 to K-9.*

SYMPOSIUM K

Thursday June 18, 1998
Jeudi 18 juin 1998

Morning
Matin

SESSION VII - Diamond-Like Carbon

Chairperson: J. Robertson, *Engineering Dept, Cambridge University, UK*

- K-VII.1 8:30-9:00 - Invited - DIAMOND-LIKE CARBON AS A PASSIVATION LAYER IN HIGH VOLTAGE SEMICONDUCTOR DEVICES, G.A.J. Amaratunga, *Dept. of Electrical Engineering and Electronics, University of Liverpool, Liverpool L69 3GJ, UK*
- K-VII.2 9:00-9:20 INSIGHTS ON THE DEPOSITION MECHANISM OF SPUTTERED AMORPHOUS CARBON FILMS, S. Logothetidis, M. Gioti, P. Patsalas and C. Charitidis, *Department of Physics, Aristotle University of Thessaloniki, 54006, Thessaloniki, Greece*
- K-VII.3 9:20-9:40 SYNTHESIS AND CHARACTERISTICS OF UNDOPED AND DOPED HIGHLY TETRAHEDRAL AMORPHOUS CARBON FILMS, Aixiang Wei, Shaoqi Peng, *Department of Physics, Zhongshan University, Guangzhou, China; Dihu Chen, Ning Ke, W.Y. Cheung, S.P. Wong, Department of Electronic Engineering, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong*
- K-VII.4 9:40-10:00 MICROSTRUCTURE OF POLYMER-LIKE HYDROGENATED AMORPHOUS CARBON INVESTIGATED BY IN-SITU INFRARED ELLIPSOMETRY, T. Heitz, B. Drévilon, C. Godet, J.E. Bourée, *LPICM (CNRS), Ecole Polytechnique, 91128 Palaiseau, France*
- K-VII.5 10:00-10:20 A STUDY OF THE EFFECTS OF NITROGEN INCORPORATION AND ANNEALING ON THE ELECTRICAL PROPERTIES OF HYDROGENATED AMORPHOUS CARBON FILMS, R.U.A. Khan, A.P. Burden, S.R.P. Silva, J.M. Shammon, and B.J. Sealy, *School of Electronic Engineering, Information Technology and Mathematics, University of Surrey, Guildford, Surrey, GU2 5XH, UK*

10:20-10:50

BREAK

SESSION VIII - Diamond I

Chairperson: G.A.J. Amaratunga, *University of Liverpool, UK*

- K-VIII.1 10:50-11:20 - Invited - GROWTH OF ELECTRONIC GRADE DIAMOND FILMS AND ITS APPLICATION, A. Flöter, *DB Forschungszentrum, Ulm, Germany*
- K-VIII.2 11:20-11:40 RF-BIAS ENHANCED NUCLEATION AND ORIENTED GROWTH OF CVD-DIAMOND, P. Mangang, R. Locher, C. Wild, P. Koidl, *Fraunhofer-Institut für Angewandte Festkörperphysik, Tullastraße 72, 79108 Freiburg, Germany*
- K-VIII.3 11:40-12:10 - Invited - DOPING OF DIAMOND, R. Kalish, *Physics Dept. and Solid State Institute, Technion, Haifa 32000, Israel*
- K-VIII.4 12:10-12:30 d-DOPING IN DIAMOND, M. Kunze, A. Vescan, P. Gluche, W. Ebert, and E. Kohn, *Department of Electron Devices and Circuits, University of Ulm, 89069 Ulm, Germany*
- 12:30-14:00 LUNCH

SYMPOSIUM K

Thursday June 18, 1998
 Jeudi 18 juin 1998

Afternoon
 Après-Midi

SESSION IX - Diamond II

Chairperson: R. Kalish, Technion, Haifa, Israel

- K- IX.1 14:00-14:30 - Invited - CARBON-BASED MATERIALS FOR MICROELECTRONICS, L. Ley, Electronic Properties of Diamond Surfaces, Erwin-Rommel-Str. 1, 91058 Erlangen, Germany
- K- IX.2 14:30-14:50 MECHANISMS OF SURFACE CONDUCTIVITY IN THIN FILM DIAMOND: APPLICATION TO HIGH PERFORMANCE DEVICES, H.J. Looi, L.Y.S. Pang, A. Molloy*, F. Jones*, M.D. Whitfield, J.S. Foord* and R.B. Jackman, Electronic and Electrical Engineering, University College London, Torrington Place, London W1CE 7JE, UK; *Physical and Theoretical Chemistry Laboratory, University of Oxford, South Parks Road, Oxford OX1 3QZ, UK
- K- IX.3 14:50-15:10 A LARGE RANGE OF BORON DOPING WITH LOW COMPENSATION RATIO FOR HOMOEPITAXIAL DIAMOND FILMS, J.P. Lagrange, A. Deneuville and E. Ghereart, LEPES - CNRS, BP 166, 38 042 Grenoble Cedex 9, France
- K-IX.4 15:10-15:30 OPTIMISATION OF CVD DIAMOND GROWTH FOR RADIATION DETECTOR FABRICATION, R.D. Marshall, P. Bergonzo, F. Foulon; A. Brambilla, B. Guizard, LETI (CEA-Technologies Avancées)/DEIN/SPE, CEA/Saclay, 91191 Gif-sur- Yvette cedex, France

15:30-16:00

BREAK

SESSION X - Diamond III

Chairperson: L. Ley, Electronic Properties of Diamond Surfaces, Erlangen, Germany

- K-X.1 16:00-16:20 MINORITY-CARRIER TRANSPORT PARAMETERS IN CVD DIAMOND, S. Salvatori, M.C. Rossi, F. Galluzzi, Dip. Ingegneria Elettronica, Università di Roma Tre, v. Vasca Navale 84, 00146 Roma, Italy
- K-X.2 16:20-16:40 HIGH PERFORMANCE DEVICES FROM SURFACE CONDUCTING THIN FILM DIAMOND, H.J. Looi, M.D. Whitfield, J.S. Foord* and R.B. Jackman, Electronic and Electrical Engineering, University College London, Torrington Place, London W1CE 7JE, UK; *Physical and Theoretical Chemistry Laboratory, University of Oxford, South Parks Road, Oxford OX1 3QZ, UK
- K-X.3 16:40-17:00 ELECTRON ENERGY-LOSS SPECTROSCOPY IN TRANSMISSION ON UNDOPE AND DOPED DIAMOND THIN FILMS, S. Waidmann, K. Bartsch, I. Endler, F. Fontaine*, B. Arnold, L. Stummchen**, M. Knupfer, A. Leonhardt* and J. Fink, Institut für Festkörper- und Werkstofforschung Dresden, 01171 Dresden, Germany; *Forschungszentrum Rossendorf, 01314 Dresden, Germany; **Institut für Analytische Chemie, Technische Universität Dresden, 01062 Dresden, Germany
- K-X.4 17:00-17:20 COMPUTER SIMULATIONS OF IMPLANTATION DAMAGE IN DIAMOND AND ITS ANNEALING, D. Saada, J. Adler and R. Kalish, Physics Department, Technion, Haifa 32000, Israel
- K-X.5 17:20-17:40 PHOTOCONDUCTIVITY OF DIAMOND-LIKE CARBON, A. Ilie, J. Robertson, N. Conway, B. Kleinsorge, W.I. Milne, Engineering Dept, Cambridge University, Cambridge CB2 1PZ, UK

END OF SYMPOSIUM K

SYMPOSIUM K

SYMPOSIUM K
POSTER SESSION

Wednesday June 17, 1998
Mercredi 17 juin 1998

Afternoon
Après-midi

Poster Session I
16:10-18:30

- K-VI/P1 STRUCTURE, DYNAMICS AND OPTICAL PROPERTIES OF FULLERENES AND FULLERITES C_{60} AND C_{70} , Y. Prylutsky, Dept. of Physics, Kyiv Shevchenko University, Volodymyrska Str. 64, 252033 Kyiv, Ukraine
- K-VI/P2 DOPING MECHANISM IN ta-C C, W. Chen, J. Robertson, Engineering Dept, Cambridge University, Cambridge CB2 1PZ, UK
- K-VI/P3 ELECTRON RECOMBINATION IN a-C:H, ta-C and ta-C, J. Robertson, Engineering Dept, Cambridge University, Cambridge CB2 1PZ, UK
- K-VI/P4 QUANTUM CONFINEMENT AND OPTICAL ABSORPTION OF DIAMOND LIKE AMORPHOUS CARBON, E. Mpawenayo and A. Tagliaferro, Dipartimento di Fisica, Politecnico di Torino, corso duca degli Abruzzi 24, 10129 Torino, Italy
- K-VI/P5 FORMATION OF A THICK C_{60}/C_{70} MEMBRANES, V.F. Masterov, A.V. Prikhodko, Exp. Phys. Depart., St. Petersburg State Technical University, 195251 St. Petersburg, Russia; O.I. Konkov, V. Yu. Davydov, Ioffe Physiko-Technical Institute, 194021 St. Petersburg, Russia
- K-VI/P6 FIELD EMISSION BEHAVIOUR OF PULSED LASER DEPOSITED CARBON FILMS, B. Angleraud, A. Catherinot, LMCTS UPRESA CNRS n°6015, 123 av. A. Thomas, 87060 Limoges cedex, France, J. Baylet, M.N. Séméria, A. Perrin, R. Meyer, EFM/SCPI/DMITEC, CEA/Leti, 17 rue des Martyrs, 38054 Grenoble cedex 9, France
- K-VI/P7 CHROMIUM IN AMORPHOUS CARBON BASED THIN FILMS PREPARED IN A PACVD PROCESS, P. Gantenhein, S. Brunold, School of Engineering ITR, Oberseestr. 10, 8640 Rapperswil, Switzerland
- K-VI/P8 A STUDY OF ELECTRON INTERACTIONS IN FULLEREN DERIVATIVES, L.G. Bulusheva and A.V. Okotrub, Institute of Inorganic Chemistry SB RAS, av. Lavrenteva 3, 630090 Novosibirsk, Russia
- K-VI/P9 X-RAY SPECTROSCOPIC CHARACTERIZATION OF CARBON-BASED MATERIALS, A.V. Okotrub, L.G. Bulusheva and L.N. Mazalov, Institute of Inorganic Chemistry SB RAS, av. Lavrenteva 3, 630090 Novosibirsk, Russia
- K-VI/P10 SECOND HARMONIC GENERATION (SHG) SPECTROSCOPY OF FULLERENE LANGMUIR FILMS, O.A. Aktsipetrov, E.D. Mishina, T.V. Misuryaev, A.A. Nikulin, V.R. Novak, Department of Physics, Moscow State University, Moscow 119899, Russia, and Th. Rasing, Research Institute for Materials, University of Nijmegen, Nijmegen, The Netherlands
- K-VI/P11 FRENKEL EXCITATIONS OF CN (N=12,60) CLUSTERS, S.V. Rotkin, Ioffe PTI, Polytechnicheskaya 26, 194021 St-Petersburg, Russia
- K-VI/P12 THE NANOSECOND ELECTRIC TRANSPORT IN Cu_xC_{60} COMPOUNDS (POWDER AND FILMS), V.F. Masterov, A.V. Prikhodko, Experimental Phys. Depart., St. Petersburg State Technical University, St. Petersburg, Russia and O.I. Konkov, Ioffe Physiko-Technical Institute, St.Petersburg, Russia
- K-VI/P13 LASER ABLATION PLASMA DEPOSITION OF CLUSTER-ASSEMBLED CARBON POWDERS, V.S. Burakov, A.F. Bokhonov, Y.L. Kasuytich, N.A. Savastenko, M.I. Nedel'ko, and N.V. Tarasenko, Institute of Molecular and Atomic Physics National Academy of Sciences, 70 Scaryna Ave., 220072 Minsk, Belarus
- K-VI/P14 CARBON ONION INTERSHELL ORIENTATIONAL MELTING, Yu.E. Lozovik, A.M. Popov, Institute of Spectroscopy, Russian Academy of Science 142092, Troitsk, Moscow region, Russia
- K-VI/P15 BORON ION-IMPLANTATION IN DIAMOND: STATE OF THE ART, C. Uzan-Saguy, V. Richter, B. Ran and R. Kalish, Physics Dept. and Solid State Institute, Technion, Haifa 32000, Israel

SYMPOSIUM K

- K-VI/P16 *EVALUATION OF VARIOUS REACTIONS APPLIED TO PRODUCE $C_{60}Fe$ COMPOUND*, E. Kowalska, P. Byszewski*, J. Radomska, R. Diduszko, Institute of Vacuum Technology, Długa 44/50, 00-241 Warsaw, Poland (*also at Institute of Physics PAS, al.Lotnikow 32/46, 02-668 Warsaw); Z. Kucharski, Institute of Atomic Energy, 05-400 Swierk, Poland; A. Huczko, H. Lange, Department of Chemistry, Warsaw University, L. Pasteura 1, 02-093 Warsaw, Poland; R. Kochkanjan, Institute of Physico-Organic and Coal Chemistry NAS, R. Luxembourg 68, 340-114 Donetsk, Ukraine; V. Chabanenko, Physico-Technical Institute NAS, R. Luxembourg 72, 340-114, Donetsk, Ukraine
- K-VI/P17 *EXPERIMENTAL ELECTRONIC STRUCTURE STUDIES OF INTERCALATED, HETERO AND ENDOHE-DRAL FULLERENES*, S. Waidmann, M. Knapfer, R. Friedlein, T. Pichler, M.S. Golden and J. Fink, Institut für Festkörper- und Werkstofforschung Dresden, 01171 Dresden, Germany
- K-VI/P18 *FIELD EMISSION OF ELECTRONS FROM CARBON CLUSTERS C_{60}* , A.A. Paiziev, Laboratory of Positron Diagnostics Institute of Electronics Uzbek Academy of Sciences, Akademgorodok, 700143 Tashkent, Uzbekistan
- K-VI/P19 *NANOFABRICATION OF CARBON BASED MASKS FOR SELECTIVE GROWTH ON SEMICONDUCTOR SURFACES*, A. Avramescu, A. Ueta, K. Uesugi and I. Suemune, Res. Inst. Elect. Sci, Hokkaido University, Sapporo 060, Japan
- K-VI/P20 *FIELD EMISSION FROM NANOCARBONS AND NANOCARBONS WITH CVD CARBON COATING*, A.N. Andronov, S.V. Robozarov, State Technical University, 195251, St.Petersburg, Russia; S.K. Gordeev, Central Research Institute of Materials, 191014, St.Petersburg, Russia; A.I. Kosarev, A.J. Vinogradov, A.F.Ioffe Phys.-Technical Institute, 194021, St.Petersburg, Russia
- K-VI/P21 *THE STUDY OF CARBON NANOTUBE PHASE TRANSITIONS BY BALL MILLING PROCESSING*, Y.B.Li, B.Q. Wei, J. Liang, D.H. Wu, Department of Mechanical Engineering, Tsinghua University, Beijing 100084, China
- K-VI/P22 *FABRICATION OF ALUMINIUM-CARBON NANOTUBE COMPOSITES AND THEIR ELECTRICAL PRO-PERTIES*, C.L. Xu, B.Q. Wei, R.Z. Ma, J. Liang, X.K. Ma, D.H. Wu, Department of Mechanical Engineering, Tsinghua University, Beijing 100084, China
- K-VI/P23 *A PARAMETRIC STUDY OF THE OPTICAL PROPERTIES OF CNx THIN FILMS DEPOSITED BY A RF PLASMA BEAM*, G. Dinescu, E. Aldea, B. Mitu, C. Tanase, National Institute for Laser, Plasma and Radiation Physics, Magurele MG-36, Bucharest, Romania; A. de Graaf, M.C.M. van de Sanden, Department of Applied Physics, Eindhoven University of Technology, The Netherlands
- K-VI/P24 *POLYMER- C_{60} EXCITON MIXING*, S.V. Rotkin, Ioffe PTI, Polytechnicheskaya 26, 194021 St.Petersburg, Russia
- K-VI/P25 *OPTICAL STUDY OF BONDED AND NON-BONDED HYDROGEN IN DIAMOND-LIKE CARBON*, V.I. Ivanov-Omskii and S.G. Yastrebov, A.F. Ioffe Physical-Technical Inst, 194021 St.Petersburg, Russia
- K-VI/P26 *PERCOLATION THROUGH COPPER-DOPED DIAMOND-LIKE CARBON*, A.B. Lodygin, V.I. Ivanov-Omskii, V.I. Siklitsky, A.V. Tolmatchev and S.G. Yastrebov, A.F. Ioffe Institute, 194021 St.Petersburg, Russia
- K-VI/P27 *AN INVESTIGATION OF THE THERMAL PROFILES INDUCED BY ENERGETIC CARBON MOLECULES ON A GRAPHITE SURFACE*, M. Kerford and R.P. Webb, S.C.R.I.B.A., School of Electronic Engineering, Information Technology and Mathematics, University of Surrey, Guildford, Surrey, GU2 5XH, UK
- K-VI/P28 *FUNCTIONAL MATERIALS: FILM/BULK COMPOSITES SELF-ORGANIZATING FROM CARBON MOLE-CULES/CLUSTERS AND MICRO/NANOCRYSTALLINE OXIDE METAL WITH NEW ELECTRONICS, OPTO-ELECTRONICS, MAGNETO-OPTICS PROPERTIES*, E. Buzaneva, A.D. Garchinsky, Y.I. Prilutsky, V.F. Kovalenko, National T. Shevchenko University, Vladimirska St. 60, 252033 Kiev, Ukraine; B.D. Shanina, A.A. Konchits, Institute of Semiconductor Physics, Science Pr. 45, 252130 Kiev, Ukraine; M.Y. Katsai, M.A. Voronkin, Institute of Superhard Materials, Stankozavodskaya 43, 252046 Kiev, Ukraine; G.G. Andrievsky, Institute for Therapy of the Academy of Medical Sciences of Ukraine, Postysheva St. 2a, 310116 Kharkov, Ukraine
- K-VI/P29 *POLYCRYSTALLINE DIAMOND FORMATION BY POSTGROWTH ION BOMBARDMENT OF SPUTTER-DEPOSITED AMORPHOUS CARBON FILMS*, P. Patsalas, S. Logothetidis, P. Douka, M. Gioti, G. Stergioudis, Ph. Komninou and Th. Karakostas, Department of Physics, Aristotle University of Thessaloniki, 54006 Thessaloniki, Greece
- K-VI/P30 *ELECTRICAL BEHAVIOUR OF METAL/a-C/SI AND METAL/CN/SI DEVICES*, E. Evangelou, N. Konofaos, S. Logothetidis* and M. Gioti,* Applied Physics Laboratory, Physics Department, University of Ioannina, 45110 Ioannina, Greece; *Physics Department, Aristotle University of Thessaloniki, 54006 Thessaloniki, Greece

SYMPOSIUM K

- K-VI/P31 *SYNTHESIS OF THE DIAMOND CRYSTALS FROM OXYGEN-ACETILENE FLAME ON THE Si AND Mo SUBSTRATES AT LOW TEMPERATURE, V. A. Cherepanov, E.V. Grigoryev, V. N. Savenko, D. V. Sheglov, A. V. Matveev, A. S. Zolkin, Novosibirsk State University, 630090 Novosibirsk, Russia*
- K-VI/P32 *ULTRAFast RELAXATION PROCESSES IN CARBON-BASED MATERIALS, V.M. Farztdinov, Yu.E. Lozovik, Yu.A. Matveets, A.L. Dobryakov, D.V. Lisin, Institute of Spectroscopy, RAS, Troitsk, Moscow Region, 142092, Russia; S.A. Kovalenko, N.P. Ernsting, Humboldt-Universität zu Berlin, Germany, and G. Marowsky, Laser Laboratorium Göttingen, Germany*
- K-VI/P33 *PHASE TRANSITION AND SELF-ASSEMBLING PROCESSES IN CLUSTERS OF ULTRADISPERSE DIAMOND, A.E. Aleksenskii, M.V. Baidakova, V.I. Siklitsky, A. Ya. Vul', Ioffe Physico-Technical Institute, 194021 St.Petersburg, Russia*
- K-VI/P34 *MOLECULAR MODELING OF FULLERENES AND IRON COMPOUNDS COMPLEXES AIMED TO SELECT PROPER REAGENTS AND REACTION CONDITIONS, P. Byszewski*, E. Kowalska, Institute of Vacuum Technology, ul. Długa 44/50, 00-241 Warsaw, Poland (* also at Institute of Physics PAS, al.Lotnikow 32/46, 02-668 Warsaw, Poland) Z. Kucharski, Institute of Atomic Energy, 05-400 Ōwierk, Poland*
- K-VI/P35 *¹⁶¹Dy MÖSSBAUER STUDY OF Dy@C₈₂, Yu.S. Grushko, E.G. Alekseev, V.S. Kozlov, L.I. Molkanov, St. Petersburg Nuclear Physics Institute, Gatchina 188350, Russia and H. Giefers, M. Strecker, G. Wortmann, Universität-GH Paderborn, Fachbereich Physik, 33095 Paderborn, Germany*

E-MRS'98 SPRING MEETING



SYMPOSIUM L

Nitrides and Related Wide Band Gap Materials

Symposium Organizers

J.-Y. DUBOZ	Central Research Lab., Thomson-CSF, Orsay, France
F.A. PONCE	Xerox Parc, Palo Alto, CA, USA
A. HANGLEITER	Optoelectronics Group, Univ. of Stuttgart, Stuttgart, Germany
K. KISHINO	Electrical and Electronics Eng., Sophia Univ., Tokyo, Japan

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SYMPOSIUM L

Tuesday June 16, 1998
Mardi 16 juin 1998

Morning
Matin

SESSION I - Optical Properties

Chairperson: J.Y. Duboz, Thomson CSF, Orsay, France

- L-I.1** 9:00-9:30 - Invited - *LUMINESCENCE IN III-NITRIDES*, B. Monemar, Dept of Physics and Measurement Technology, Linköping University, 58183 Linköping, Sweden
- L-I.2** 9:30-9:50 *TEMPERATURE DEPENDENCE OF OPTICAL CONSTANTS IN GaN AND GaInN*, U. Tisch, J. Salzman, E. Finkman, G. Bahir, TECHNION, Haifa 32000, Israel; A. Aber, S. Denbaars, L. Coldren, University of California, Santa Barbara, CA 93106, USA, and W. Van der Stricht, University of Gent, St. Pietersnieuwstraat 41, 9000 Gent, Belgium
- L-I.3** 9:50-10:10 *OPTICAL PROPERTIES OF HEXAGONAL GaN, AlN AND Al_xGa_{1-x} N FILMS IN THE SPECTRAL RANGE 3-20eV*, T. Wethkamp, K. Wilfers, M. Cardona, Max-Planck-Institut für Festkörperforschung, Heisenbergstr. 1, 70569 Stuttgart, Germany; and N. Esser, C. Cobet, W. Richter, Institut für Festkörperphysik, TU Berlin, Hardenbergstr. 36, 10623 Berlin, Germany, and O. Ambacher, Walter-Schottky-Institut, TU München, Am Coulombwall, 85748 Garching, Germany

10:10-10:30 **BREAK**

SESSION II - Exciton Physics

Chairperson: B. Gil, GES, Université de Montpellier, France

- L-II.1** 10:30-11:00 - Invited - *ULTRAFast PHYSICS IN NITRIDES*, M.R. Hofmann, R. Zimmermann, A. Euteneuer, and W.W. Rühle, Fachbereich Physik und Wissenschaftliches Zentrum für Materialwissenschaften, Philipps-Universität, 35032 Marburg, Germany
- L-II.2** 11:00-11:20 *INTENSITY AND WAVELENGTH DEPENDENCE OF χ^3 CLOSE TO THE EXCITONIC RESONANCES OF GaN*, H. Haug, P. Gilliot and B. Honerlage, Groupe d'Optique Nonlinéaire et d'Optoélectronique, I.P.C.M.S., UMR 380046 CNRS-ULP-ECPM, 23 Rue du Loess, B.P. 20CR, 67037 Strasbourg Cedex, France; O. Briot and R.L. Aulombaré, Groupe d'Etude des Semiconducteurs, URA 357 CNRS-Université de Montpellier II, Place Eugène Bataillon, 34095 Montpellier Cedex 05, France
- L-II.3** 11:20-11:40 *STUDY OF HEXAGONAL GaN BY FEMTOSECOND-EXCITATION CORRELATION MEASUREMENT AND DEGENERATE FOUR-WAVE-MIXING*, S. Pau, J. Kuhl, F. Scholz*, C. Haerle*, M.A. Khan** and C.J. Sun**, Max-Planck-Institut, Heisenbergstrasse 1, 70569 Stuttgart, Germany; *Universität Stuttgart, 4. Physikalisches Institut, Kristalllabor, 70550 Stuttgart, Germany; **APA Optics Inc., 2950 N. E. 84th Lane, Blaine, Minnesota 55449, USA
- L-II.4** 11:40-12:00 *EXCITON RECOMBINATION IN GaN AND CAPTURE IN InGaN QUANTUM WELLS IN THE PRESENCE OF AN ELECTRIC FIELD OR UNDER INTENSE PHOTOEXCITATION*, E. Binet, J.Y. Duboz, N. Laurent, C. Grattepain, Laboratoire Central de Recherches, Thomson-CSF, 91404 Orsay, France; F. Scholz, 4. Physikalisches Institut, Universität Stuttgart, 70550 Stuttgart, Germany
- L-II.5** 12:00-12:20 *TIME-RESOLVED SPECTROSCOPY OF NITRIDE SEMICONDUCTORS*, M. Pophristic, E.H. Long, Department of Chemistry, Rutgers University, Piscataway NJ 08854-8087, C.A. Tran, R.F. Karlicek Jr., Z.C. Feng, I. Ferguson, EMCORE Corporation, Somerset NJ 08873, USA

12:20-14:00 **LUNCH**

SYMPOSIUM L

Tuesday June 16, 1998

Mardi 16 juin 1998

Afternoon

Après-midi

SESSION III - Growth: MOCVD and HVPE

Chairperson: T. Honda, Kohgakuin University, Tokyo, Japan

- L-III.1 14:00-14:30 - Invited - CURRENT STATUS OF GaN PRODUCTION MOVPE REACTORS, M. Deschler, D. Schmitz, M. Heuken, H. Juergensen, AIXTRON AG, Kackertstr. 15-17, 52072 Aachen, Germany
- L-III.2 14:30-15:00 - Invited - GROWTH OF HIGH-EFFICIENCY InGaN MQW BLUE LEDs USING LARGE-SCALE PRODUCTION MOCVD REACTOR AND THEIR CHARACTERIZATION, C.A. Tran, R.F. Karlicek, Jr., R. Stall, M. Schurman, I. Ferguson, A. Onsinski and J. Rajer, Emcore Corp, 394 Elizabeth Avenue, Somerset NJ 08873, USA
- L-III.3 15:00-15:20 CONTROL OF THE NUCLEATION OF MOVPE GaN ON SAPPHIRE USING A SiN COATING OF THE NITRIDATED SURFACE, P. Vennéguès, B. Beaumont, S. Haffouz, H. Lahreche, P. De Mierry, and P. Gibart, Centre de Recherche sur l'Hétéro-Epitaxie et ses Applications, Centre National de la Recherche Scientifique, Rue Bernard Gregory, Sophia Antipolis, 06560 Valbonne, France
- L-III.4 15:20-15:40 GROWTH OF GaN SINGLE CRYSTAL SUBSTRATES, O. Kryliouk, M. Reed, T. Dann, T. Anderson, Chemical Engineering Dept., Univ. of Florida, Gainesville FL 32611, USA and B. Chai, Crystal Photonics, Inc., Orlando FL 32817, USA
- L-III.5 15:40-16:00 THE GROWTH OF THICK GaN ON Si SUBSTRATE USING VERTICAL HYDRIDE VAPOR PHASE EPITAXY WITH GaCl₃, Ho-Sun Paek, Jae-In Lee, Jae-O Kwak, Su-Jeong Suh, Ji-Beom Yoo, Sungkyunkwan University, 300 Chunchun-dong Jangan-gu, Suwon, Korea

16:00-16:30 BREAK

SESSION IV - InGaN QW

Chairperson: Van der Walle

- L-IV.1 16:30-17:00 - Invited - OPTICAL PROPERTIES OF InGaN QUANTUM WELLS, S. Chichibu*, D. Cohen, M. Mack, A. Abare, P. Kozodoy, M. Minsky, S. Fleisher, S. Keller, J. Speck, J. Bowers, U. Mishra, L. Coldren, S. DenBaars, University of California, Santa Barbara, CA 93106, USA; K. Wada, NTT System Electronics Labs., Atsugi 243-0198, Japan; T. Deguchi, T. Sota, Waseda University, Shinjuku, Tokyo 169-8555, Japan; and S. Nakamura, Nichia Chemical Industries Ltd., Anan, Tokushima 774-8601, Japan; *also, Science University of Tokyo, Noda, Chiba 278-8510, Japan
- L-IV.2 17:00-17:30 - Invited - THEORETICAL OPTICAL GAIN IN InGaN QUANTUM WELLS, T. Uenoyama and M. Suzuki, Central Research Laboratories, Matsushita Electric Industrial Co. Ltd., 3-4 Hikaridai, Seika-cho Sourakugun, Kyoto 619-02, Japan
- L-IV.3 17:30-17:50 CARRIER CONFINEMENT IN GaInN/AlGaIn/GaN QUANTUM WELLS WITH ASYMMETRIC BARRIERS: DIRECTION OF THE PIEZOELECTIC FIELD, Jin Seo Im, H. Kolljer, J. Off, F. Scholz, and A. Hangleiter, 4. Physikalisches Institut, Universität Stuttgart, Pfaffenwaldring 57, 70550 Stuttgart, Germany
- L-IV.4 17:50-18:10 SPECTROSCOPY AND MICROSCOPY OF LOCALISED AND DELOCALISED EXCITONS IN InGaN-BASED LIGHT EMITTING DIODES AND EPILAYERS, K.P. O'Donnell, R.W. Martin, University of Strathclyde, Scotland; S.C. Bayliss and I. Fletcher, De Montfort University, England and W. Van der Stricht, P. Demeester, I. Moerman, University of Gent, Belgium

POSTER SESSION I

Chairpersons: B.K. Meyer, University of Giessen, Germany and M. Kamp, University of Ulm, Germany

18:10-20:00 See programme of this poster session p. L-9 to L-11.

SYMPOSIUM L

Wednesday June 17, 1998
Mercredi 17 juin 1998

Afternoon
Après-midi

SESSION V - Growth: MBE

Chairperson: G. Feuillet, CEA-Grenoble, France

- L-V.1 14:00-14:30 - Invited - MOLECULAR BEAM EPITAXY GROWTH OF NITRIDE MATERIALS, N. Grandjean and J. Massies, Centre de Recherche sur l'Hétéro-Epitaxie et ses Applications, Centre National de la Recherche Scientifique, Rue Bernard Gregory, Sophia Antipolis, 06560 Valbonne, France
- L-V.2 14:30-15:00 - Invited - PROPERTIES OF CUBIC (In,Ga)N GROWN BY MBE, O. Brandt, J.R. Mulhäuser, A. Trampert, and K.H. Ploog, Paul-Drude-Institut für Festkörperelektronik, 10117 Berlin, Germany
- L-V.3 15:00-15:20 HIGH-SPEED GROWTH OF DEVICE-QUALITY GaN AND InGaN BY RF-MBE, K. Kushi, H. Sasamoto, D. Sugihara, S. Nakamura, A. Kikuchi and K. Kishino, Department of Electrical and Electronics Engineering, Sophia University, 7-1 Kioi-cho, Chiyoda-ku, Tokyo 102-0094, Japan
- L-V.4 15:20-15:40 GROWTH OF ATOMICALLY SMOOTH AlN FILMS WITH A 5:4 COINCIDENCE INTERFACE ON Si(111) BY MBE, H.P.D. Schenk, U. Kaiser, G. Kipshidze, A. Fissel, J. Kräuflich*, H. Hobert**, W. Richter, Friedrich-Schiller-Universität Jena, Institut für Festkörperphysik, *Institut für Optik und Quantenelektronik, **Institut für Physikalische Chemie, Max-Wien-Platz 1, 07743 Jena, Germany
- L-V.5 15:40-16:00 MBE GaN GROWN ON (101)NdGaO₃ SUBSTRATES, V. Mamutin, A. Toropov, N. Kartenko, S. Ivanov, A.F. Ioffe Physico-Technical Institute, St.Petersburg, Russia; A. Wagner, Institute of Electronic Mat. Technology, Warsaw, Poland; P. Bergman and B. Monemar, University of Linköping, 581 83 Linköping, Sweden

16:00-16:30 BREAK

SESSION VI - Nanostructures

Chairperson: A. Hoffmann, University of Berlin, Germany

- L-VI.1 16:30-17:00 - Invited - SELF ORGANIZATION OF NITRIDE QUANTUM DOTS BY MOLECULAR BEAM EPITAXY, B. Daudin, F. Widmann, G. Feuillet, Y. Samson, J.L. Rouvière, N. Pelekanos, Département de Recherche sur la Matière Condensée CEA-Grenoble, SP2M/PSC, 17 rue des Martyrs, 38054 Grenoble Cedex 9, France
- L-VI.2 17:00-17:20 GaN MICROCAVITIES AND BRAGG REFLECTORS: GIANT EXCITON LIGHT COUPLING, A. Kavokin and B. Gil, Groupe d'Etude des Semiconducteurs, CC074, Université de Montpellier II, Place Eugene Bataillon, 34095 Montpellier, France
- L-VI.3 17:20-17:40 FABRICATION AND PHOTOLUMINESCENCE OF GaN/SAPPHIRE NANOMETER-SCALE STRUCTURES, D. Coquillat, A. Ribayrol*, R.M. De La Rue*, S. Murad*, C. Wilkinson*, M. Julier, O. Briot, R. Aulombard, Groupe d'Etude des Semiconducteurs, UMR 5650 CNRS-Université Montpellier 2, Place Eugène Bataillon, 34095 Montpellier cedex 05, France; *Department of Electronics and Electrical Engineering, University of Glasgow, Rankine Building, Glasgow G12 8LT, Scotland, UK
- L-VI.4 17:40-18:00 ON THE GAIN MECHANISM IN A NICHIA LASER DIODE, G. Mohs, T. Aoki, R. Shimano, M. Kuwata-Gonokami, Department of Applied Physics, University of Tokyo, Tokyo 113-8656, Japan and S. Nakamura, Nichia Chemical Industries, Tokushima 774, Japan

POSTER SESSION II

Chairpersons: W. Goetz, Hewlett-Packard Company, San Jose, USA and B. Daudin, CEA Grenoble, France

18:00-20:00 See programme of this poster session p. L-12 to p14.

SYMPOSIUM L

Thursday June 18, 1998

Jeudi 18 juin 1998

Morning

Matin

SESSION VII -InGaN

Chairperson: S. Chichibu, University of California, Santa Barbara, USA

*also, Science University of Tokyo, Chiba, Japan

L-VII.1 8:30-9:00 - Invited - INFLUENCE OF STRAIN AND BUFFER LAYER TYPE ON In-INCORPORATION DURING GaInN MOVPE, F. Scholz, J. Off, A. Kniest, 4. Physikalisches Institut, Universität Stuttgart, 70550 Stuttgart, Germany; O. Ambacher, Walter-Schottky-Institut, TU München, 85748 München, Germany

L-VII.2 9:00-9:20 COMPOSITIONAL INHOMOGENEITIES IN InGaN STUDIED BY TRANSMISSION ELECTRON MICROSCOPY AND SPATIALLY RESOLVED CATHODOLUMINESCENCE, H. Selke, T. Böttcher, S. Einfeldt, D. Hommel, P.L. Ryder, University of Bremen, PO Box 330440, 28334 Bremen, Germany; F. Bertram and J. Christen, University of Magdeburg, PO Box 4120, 39106 Magdeburg, Germany

L-VII.3 9:20-9:40 LARGE AND COMPOSITION-DEPENDENT BAND-GAP BOWING IN $\text{In}_{x}\text{Ga}_{1-x}\text{N}$ ALLOYS, C.G. Van de Walle, M.D. McCluskey, C.P. Master, L.T. Romano, and N.M. Johnson, Xerox PARC, 3333 Coyote Hill Road, Palo Alto, CA 94304, USA

L-VII.4 9:40-10:00 THE COMPOSITION PULLING EFFECT IN THE MOVPE GROWTH OF InGaN/GaN HETEROSTRUCTURES M. Schwampera, O. Schoen, D. Schmitz, M. Deschler, M. Heuken, AIXTRON AG, Kackertstr. 15-17, 52072 Aachen, Germany; B. Schineller, Institut für Halbleitertechnik, RWTH Aachen, Templergraben 55, 52056 Aachen, Germany

10:00-10:30 BREAK

SESSION VIII - Characterization

Chairperson: D. Hommel, University of Bremen, Germany

L-VIII.1 10:30-11:00 - Invited - III-V NITRIDE MATERIALS FOR HIGH EFFICIENCY VISIBLE LIGHT EMITTING DIODES, W. Goetz, Hewlett-Packard Company, Optoelectronics Division, 370 West Trimble Road, San Jose CA 95131, USA

L-VIII.2 11:00-11:20 CHARACTERIZATION OF OPTICAL INDUCED DEFECT-BAND-TRANSITIONS IN MBE GROWN GALLIUMNITRIDE BY OPTICAL ADMITTANCE SPECTROSCOPY, A. Krtisch, M. Lisker, H. Witte, J. Christen, Institute of Experimental Physics, University of Magdeburg, PO Box 4120, 39016 Magdeburg, Germany and U. Birkle, S. Einfeldt, D. Hommel, Institute of Solid State Physics, University of Bremen, PO Box 330, 28334 Bremen, Germany

L-VIII.3 11:20-11:40 EXAFS STUDIES OF GROUP III-NITRIDE ALLOY SEMICONDUCTORS, A.V. Blant, N.J. Jeffs, T.S. Cheng, Department of Physics, University of Nottingham, Nottingham NG2 7RD, UK; C. Bailey, P.G. Harrison, Department of Chemistry, University of Nottingham, Nottingham NG2 7RD, UK and J.F.W. Mosselmans and A.D. Smith, CLCR Daresbury Laboratories, Warrington, Cheshire, WA4 4AD, UK

L-VIII.4 11:40-12:00 PROBING THE LOCAL DIELECTRIC/OPTICAL PROPERTIES OF GROUP III-NITRIDES BY SPATIALLY RESOLVED EELS ON THE NANOMETER SCALE, G. Brocchi, and H. Lakner, Gerhard-Mercator-Universität Duisburg, Werkstoffe der Elektrotechnik, 47048 Duisburg, Germany

L-VIII.5 12:00-12:20 RAMAN SPECTROSCOPY OF DISORDER EFFECTS IN AlGaIn SOLID SOLUTIONS, V. Yu. Davydov, I.N. Goncharuk, M.V. Baidakova, and A.N. Smirnov, Ioffe Physicotechnical Institute, 194021 St.Petersburg, Russia; A.V. Subashiev, State Technical University, 195251 St.Petersburg, Russia; J. Aderhold, J. Stemjer, D. Uffmann, and O. Semchinova, LfI Universität Hannover, 30167 Hannover, Germany

12:20-14:00 LUNCH

SYMPOSIUM L

Thursday June 18, 1998

Jeudi 18 juin 1998

Afternoon

Après-midi

SESSION IX - LED-LASER

Chairperson: A. Hangleiter, University of Stuttgart, Germany

- L-IX.1 14:00-14:30 - Invited - MOCVD GROWTH AND CHARACTERIZATION OF AlGaInN HETEROSTRUC-
TURES AND LASER DIODES, D.P. Bour, M. Kneissl, W.M. Johnson, L. Romano,
B.S. Krusor, M. McCluskey, J. Walker and R.D. Bringans, Electronic Materials Laboratory,
XEROX Palo Alto Research Center, 3333 Coyote Hill Road, Palo Alto CA 94304, USA
- L-IX.2 14:30-15:00 - Invited - GAN LATERAL EPITAXIAL OVERGROWTH AND DEVICES, S.P. DenBaars,
H. Jarchand, P. Fini, J. Ibbetson, P. Kozodoy, J. Speck, and U. Mishra, Materials
Department, Univ. California, Santa Barbara CA 93106, USA
- L-IX.3 15:00-15:20 GaN-BASED LASER DIODE WITH FOCUSED ION BEAM-ETCHED MIRRORS,
C. Anbe, T. Takeuchi, R. Mizumoto, H. Katoh, S. Yamaguchi, C. Wetzel, H. Amano and
I. Akasaki, Department of Electrical and Electronic Engineering, Meijo University, 1-501
Shiogamaguchi, Tempaku-ku, Nagoya 468-8502, Japan and Y. Kaneko and N. Yamada,
Hewlett-Packard Laboratories, 3-2-2 Sakado, Takatsu-ku, Kawasaki 213-0012, Japan
- L-IX.4 15:20-15:40 FABRICATION AND CHARACTERIZATION OF GaN/InGaN/AlGaIN DOUBLE HETE-
ROSTRUCTURE LEDs AND THEIR APPLICATION IN LUMINESCENCE CONVER-
SION LEDs (LUCOLEDS), P. Schlöter, J. Baur, Ch. Hielscher, M. Kunzer, H. Obloh,
R. Schmidt, J. Schneider, Fraunhofer-Institut für Angewandte Festkörperphysik,
Tullastrasse 72, 79108 Freiburg, Germany
- L-IX.5 15:40-16:00 GaInN-DFB-LASERS WITH OVERGROWN DFB-GRATINGS, R. Hofmann, M. Neuner,
J. Off, F. Scholz, H. Schweizer, 4. Physikalisches Institut, Universität Stuttgart, 70550
Stuttgart, Germany

16:00-16:30

BREAK

SESSION X - AlGaIn/GaN

Chairperson: K.P. O'Donnell, University of Strathclyde, Scotland

- L-X.1 16:30-17:00 - Invited - OPTICAL PROPERTIES AND LASING OF GaN/Al_{1-x}Ga_xN QUANTUM WELLS,
L. Calcagnile, G. Coli, M. Lomascio, and R. Cingolani, Istituto Nazionale per la Fisica
della Materia, Dipartimento di Scienza dei Materiali, Università di Lecce, 73100 Lecce,
Italy; H. Tang, A. Botchkarev, W. Kim, A. Salvador, and H. Morcoç, Coordinated Science
Laboratory and Materials Research Laboratory, University of Illinois at Urbana-
Champaign, Urbana Champaign Urbana, Illinois 61801, USA
- L-X.2 17:00-17:20 MICROCALORIMETRIC ABSORPTION SPECTROSCOPY IN GAN ALGAN QUAN-
TUM WELLS, A. Göldner and A. Hoffmann, Institut für Festkörperphysik, Technische
Universität Berlin, Hardenbergstrasse 36, 10623 Berlin, Germany; B. Gil and P. Lefebvre,
Groupe d'Etude des Semiconducteurs, CC074, Université de Montpellier II, Place Eugène
Bataillon, 34095 Montpellier, France; P. Bigenwald and Ph. Christol, Université d'Avignon
et des Pays de Vaucluse, Boulevard Pasteur, 84000 Avignon, France; H. Morkoç, Virginia
Commonwealth University, 921 West Franklin Street, P.O. Box 843072, Richmond Virginia
23284-3072, USA
- L-X.3 17:20-17:40 CHARGE CONTROL SIMULATION AND EXPERIMENTAL MEASUREMENT OF
TRANSFER CHARACTERISTICS OF NGaN/GaN HEMTs, M.S. Krishnan, A. Dimoulas
and , University of Maryland, College Park, MD 20742-2115, USA
- L-X.4 17:40-18:10 - Invited - RECOMBINATION DYNAMICS OF EXCITONS IN III-NITRIDE LAYERS AND
QUANTUM WELLS, P. Lefebvre, Groupe d'Etude des Semiconducteurs, CNRS,
Université Montpellier II, CC 074, 34095 Montpellier cedex 5, France

SYMPOSIUM L

Friday June 19, 1998
Vendredi 19 juin 1998

Morning
Matin

SESSION XI - Growth: ELOG

Chairperson: F.A. Ponce, Xerox Parc, Palo Alto, USA

- L-XI.1 8:30-9:00 - Invited - SELECTIVE AREA GROWTH AND EPITAXIALLY LATERAL OVERGROWTH OF GaN BY MOVPE AND HVPE, K. Hiramatsu, Mie University, Dept of Electrical & Electronic Eng, 1515 Kamihama, Tsu 514-5807, Japan
- L-XI.2 9:00-9:20 EPITAXIAL LATERAL OVERGROWTH GaN STRUCTURES - SPATIALLY RESOLVED CHARACTERIZATION BY CATHODOLUMINESCENCE MICROSCOPY AND MICRO-RAMAN-SPECTROSCOPY, E. Bertram, T. Riemann, J. Christen, Otto-von-Guericke-Universität Magdeburg, PO Box 4120, 39016 Magdeburg, Germany; H. Siegle, A. Hoffmann, Technische Universität Berlin, Germany, K. Hiramatsu, Mie University, Mie, Japan
- L-XI.3 9:20-9:40 LATERAL EPITAXY PHENOMENON AND DISLOCATION DENSITY REDUCTION IN SELECTIVELY GROWN GaN STRUCTURES, T.S. Zheleva, Ok-Hyun Nam, W.M. Ashmawi*, and R.F. Davis, Department of Materials Science and Engineering, North Carolina State University, *Department of Mechanical Engineering, Raleigh, NC 27695, USA
- L-XI.4 9:40-10:00 HIGH QUALITY LOG-GaN LAYERS ON GaN/Al₂O₃ PATTERNED SUBSTRATES BY HALIDE VAPOUR PHASE EPITAXY, G. Nataf, B. Beaumont, A. Bouillé, P. Inéguès, S. Haffouz, M. Vaille and P. Gibart, Centre de Recherche sur l'Hétéroépitaxie et ses Applications (CRHEA-CNRS), Rue B. Gregory, Sophia Antipolis, 06560 Valbonne, France

10:00-10:30 BREAK

SESSION XII - Process and Device

Chairperson: K. Kishino, Sophia University, Tokyo, Japan

- L-XII.1 10:30-11:00 - Invited - A. Riechert, Siemens, Germany
- L-XII.2 11:00-11:20 NOVEL PLASMA CHEMISTRES FOR HIGHLY SELECTIVE DRY ETCHING OF In_{0.5}Ga_{0.5}N, BI₂ AND BBr₃, H. Cho, J. Hong, T. Maeda, S.M. Donovan, C.R. Abernathy, S.J. Pearton, Department of Materials Science and Engineering, University of Florida, Gainesville FL 32611, USA and R.J. Shul, Sandia National Laboratories, Albuquerque, NM 87185, USA
- L-XII.3 11:20-11:40 EFFECT OF As DIFFUSION ON P-TYPE GaN CONTACTS, S. Uchida, D. Cohen, A. Abare, J. Ko, R. Naone, B. Mason, E. Hegblom, Y. Akulova, P. Kozody, U. Mishra, L.A. Coldren, S.P. DenBaars, University of California, Santa Barbara CA 93106, USA
- L-XII.4 11:40-12:00 THE ANALYSIS OF CONTACT RESISTIVITY BETWEEN A P-TYPE GaN LAYER AND ELECTRODE IN InGa_{0.5}N MQW LASER DIODES, M. Onomura, S. Saito, L. Sugiura, M. Nakasugi, K. Sasanuma, J. Nishio, J. Rennie, Shin-ya Nunoue, and K. Itaya, Toshiba Corp., Advanced Semiconductor Devices Laboratories, Kawasaki 210-8582, Japan
- L-XII.5 12:00-12:20 W AND W/WSi/In_{0.5}Al_{0.5}N OHMIC CONTACTS TO GaN, A. Zeitouny, M. Eizenberg, Dept. of Materials Engineering, Technion - Israel Institute of Technology, Haifa 32000, Israel; S.J. Pearton, Dept. of Materials Science and Engineering, University of Florida, Gainesville, FL 32611, USA; F. Ren, Dept. of Chemical Engineering, University of Florida, Gainesville, FL 32611, USA

12:20-14:00 LUNCH

SYMPOSIUM L

Friday June 19, 1998
Vendredi 19 juin 1998

Afternoon
Après-midi

SESSION XIII - FET + Detectors

Chairperson: S. Denbaars, *University of California Santa Barbara, USA*

- L-XIII.1 14:00-14:30 - Invited - MICROWAVE ELECTRONICS DEVICE APPLICATIONS OF AlGaIn/GaN HETERO-STRUCTURES, Q. Chen, *APA Optics, Blaine, MN 55449, USA*
- L-XIII.2 14:30-15:00 - Invited - HIGH PRESSURE FABRICATION AND PROCESSING OF GAN, T. Suski, *Unipress, Polish Academy of Sciences, 01-142 Warszawa, Poland*
- L-XIII.3 15:00-15:20 MATERIALS REQUIREMENTS FOR HIGH TEMPERATURE GaN BASED HETERO-JUNCTION FETs, L. Daumiller, C. Kirchner*, M. Kamp*, K.J. Ebeling*, J. Off**, F. Scholz** and E. Kohn, *Department of Electron Devices and Circuits, University of Ulm, 89069 Ulm, Germany; *Department of Optoelectronic, University of Ulm, 89069 Ulm, Germany; **4th Physical Institute, University of Stuttgart, 70550 Stuttgart, Germany*
- L-XIII.4 15:20-15:40 BREAKDOWN MECHANISMS IN (Al,Ga)N BASED PHOTODETECTORS, L. Ferguson, C. Tran and M. Schurman, *Emcore Corporation, 394 Elizabeth Ave, Somerset NJ 08873, USA*
- L-XIII.5 15:40-16:00 LOW PRESSURE MOVPE GROWN AlGaIn FOR UV PHOTODETECTOR APPLICATIONS, E. Omnes, N. Marengo, S. Haffouz, H. Lahreche, Ph. de Mierry, *CNRS-CRHEA, rue Bernard Grégory, Sophia Antipolis, 06560 Valbonne, France; P. Hageman, Katholieke Universiteit Nijmegen, Fac. Der Natuurwetenschappen, Afd. EVSF III, Toernooiveld, 6625 ED Nijmegen, The Netherlands; E. Monroy, F. Cule, E. Munoz, Dpto. Ingeniera Electronica, E.T.S.I. Telecomunicacion, Ciudad Universitaria, 28040 Madrid, Spain*

16:00-16:30 BREAK

SESSION XIV - Growth

Chairperson: P. Gibart, *CNRS-CRHEA, Sophia Antipolis, Valbonne, France*

- L-XIV.1 16:30-16:50 OPTICAL PROPERTIES OF CUBIC GaN GROWN ON SiC/Si SUBSTRATES, A. Philippe, C. Bru-Chevallier, M. Vernay, G. Guillot, *Laboratoire de Physique de la Matière (UMR CNRS 5511), INSA, 20 av. A. Einstein, 69621 Villeurbanne Cedex, France and J. Hübner, B. Daudin, G. Feuillet, CEA Grenoble - DRFMC/SP2M/PSC, 17 rue des Martyrs, 38054 Grenoble Cedex 09, France*
- L-XIV.2 16:50-17:10 IN SITU REAL TIME ELLIPSOMETRY MONITORING DURING GaN EPILAYERS PROCESSING, M. Losurdo, P. Capezzuto, G. Bruno, *Plasma Chemistry Research Center, MITER-CNR, via Orabona, 4, 70126 Bari, Italy*
- L-XIV.3 17:10-17:30 LOW TEMPERATURE BUFFER GROWTH TO IMPROVE HYDRIDE VAPOR PHASE EPITAXY OF GaN, Jeong-wook Lee, Ho-sun Paek, Jae-In Lee, Ji-Beom Yoo, *Sungkyunkwan University, 300 Chunchun-dong Jangan-gu, Suwon, Korea and Dong-Wha Kum, Metal Alloy Design Center, Korea Institute of Science and Technology, PO Box 131, Cheongryang, Seoul, Korea*

END OF SYMPOSIUM L

SYMPOSIUM L

SYMPOSIUM L
POSTER SESSIONS

Tuesday June 16, 1998
Mardi 16 juin 1998

Afternoon
Après-Midi

Poster Session I
18:00-20:00

- L-IP1 *TERTIARYBUTYLHYDRAZINE: A NEW PRECURSOR FOR THE MOVPE OF III NITRIDES, U.W. Pohl, C. Möller, K. Knorr, W. Richter, J. Gottfriedsen, H. Schumann, Technische Universität Berlin, Hardenbergstr. 36, 10623 Berlin, Germany; A. Fielicke, K. Rademann, Humboldt-Universität zu Berlin, Bunsenstr. 1, 10117 Berlin, Germany*
- L-IP2 *PULSED LASER DEPOSITION OF GaN THIN FILMS, M. Cazzanelli, D. Cole, J.F. Donegan and J.G. Lunney, Department of Physics, Trinity College, Dublin 2, Ireland*
- L-IP3 *OPTICAL CHARACTERIZATION OF INTERFACE PROPERTIES FOR HEXAGONAL GaN GROWN BY MBE ON GaAs, S. Shokhovets, R. Goldhahn, G. Gobsch, Institut f. Physik, TU Ilmenau, PF 100565, 98684 Ilmenau, Germany, and T.S. Cheng, C.T. Foxon, Department of Physics, University of Nottingham, Nottingham NG7 2RD, UK*
- L-IP4 *CRYSTALLINE QUALITY OF GaInN/GaN HETEROSTRUCTURES, Q. Liu, G. Brock, and H. Lakner, Gerhard-Mercator-Universität Duisburg, Werkstoffe der Elektrotechnik, 47048 Duisburg, Germany, and F. Scholz, A. Sohmer, 4. Physikalisches Institut, Universität Stuttgart, 70550 Stuttgart, Germany*
- L-IP5 *INFLUENCE OF GaN BUFFER LAYERS ON THE STRUCTURAL PROPERTIES OF MBE GROWN GaN LAYERS, V. Kirchner, R. Ebel, H. Heinke, H. Selke, S. Einfeldt, and D. Hommel, University of Bremen, Kufsteiner Str. NW1, 28359 Bremen, Germany*
- L-IP6 *X-RAY ANALYSIS OF THE TEXTURE OF HETEROEPITAXIAL GALLIUM NITRIDE FILMS, N. Herres, H. Obloh, K. Bachem, Fraunhofer-Institut für Angewandte Festkörperphysik, Tullastraße 72, 79108 Freiburg, Germany, and K. Helming, Institut für Metallkunde u. Metallphysik, TU Clausthal, Grosse Bruch 23, 36678 Clausthal, Germany*
- L-IP7 *COAXIAL RF-MAGNETRON NITROGEN ACTIVATOR FOR GaN MBE GROWTH, Y.N. Jmerik, V.V. Mamutin, V.A. Vekshin, T.V. Shubin, S.V. Ivanov, P.S. Kop'ev, A.F. Ioffe Physico-Technical Institute, 194021, St. Petersburg, Russia*
- L-IP8 *STUDY OF c-BN FILMS DEPOSITED ON DIAMOND FILMS, J. Pascallan, Y. Stambouli, D. Bouchier, G. Nouet*, F. Silva**, A. Gicquel**, Institut d'Electronique Fondamentale, Bât 220, Université Paris-Sud, 91405 Orsay cedex, France, *LERMAT, ISMRA, Bd du Maréchal Juin, 14050 Caen, cedex, France, **LIMHP, université de Villetaneuse, Av. J.B. Clément, 93430 Villetaneuse, France*
- L-IP9 *LP-MOCVD GROWTH OF GaN ON SILICON SUBSTRATES—COMPARISON BETWEEN AlAs AND ZnO BUFFER LAYERS, A. Strittmatter, A. Krost, V. Türk, M. Straßburg, and D. Bimberg, J. Bläsing*, T. Hempel*, and J. Christen*, Institut f. Festkörperphysik, Technische Universität Berlin, Sekr. PN 5-2, Hardenbergstr. 36, 10623 Berlin, Germany, *Institut f. Experimentelle Physik, Otto-von-Guericke Universität Magdeburg, PO Box, 10427 Magdeburg, Germany*
- L-IP10 *IMPACT OF THE ZnO BUFFER LAYER ON THE MORPHOLOGY AND THE OPTICAL PROPERTIES OF GaN, J. Christen, A. Hoffmann*, Institut f. Exp. Physik, Otto-von-Guericke-Universität Magdeburg, Germany, *Institut f. Festkörperforschung, Technische Universität Berlin, Germany*
- L-IP11 *THE INFLUENCE OF MOCVD PROCESS SCHEME TO THE OPTICAL PROPERTIES OF GaN LAYERS M. Ciorga, L. Bryja, J. Misiewicz, R. Paszkiewicz, R. Korbutowicz, M. Panek, B. Paszkiewicz, M. Tlaczala, Wrocław University of Technology, Institute of Physics, Wyspińskiego 27, 50-370 Wrocław, Poland*

SYMPOSIUM L

- L-IP12 *CHARACTERISTICS OF UNDOPED AND MAGNESIUM DOPED GAN FILMS GROWN BY LASER INDUCED MBE*, M. Gross, G. Henn, J. Ziegler, M. Klose, N. Wieser and H. Schröder, DLR Stuttgart, Institute of Technical Physics, Pfaffenwaldring 38-40, 70569 Stuttgart, Germany
- L-IP13 *CUBIC GaN GROWTH ON Si (001) SUBSTRATES BY PLASMA-ASSISTED MOLECULAR BEAM EPITAXY*, M. Tamura and Y. Hiroyama, JRCAT-ATP, 1-1-4 Higashi, Tsukuba, Ibaraki 305, Japan
- L-IP14 *GALLIUM METAL INCLUSIONS IN GAN*, A.V. Blant, T.S. Cheng, D. Korakakis, I. Harrison, L. Flannery, R. Campion, Department of Physics, University of Nottingham, University Park, Nottingham NG2 7RD, UK and S.V. Novikov, Ioffe Physical-Technical Institute, St.Petersburg 194021, Russia
- L-IP15 *MODELLING OF THE DEFECT STRUCTURE IN GaN MOCVD THIN FILMS BY X-RAY DIFFRACTION*, E. Huet, M.-A. di Forte-Poisson, Thomson-CSF/LCR, Orsay, France; J. di Persio, Université de Lille, Villeneuve d'Ascq, France; B.Pécz, Res. Inst. for Tech. Phys., Budapest, Hungary
- L-IP16 *ANALYSIS OF COMPOSITION FLUCTUATIONS IN ALGAN*, B. Neubauer, D. Gerthsen, Laboratorium für Elektornenmikroskopie, Universität Karlsruhe, 76128 Karlsruhe, Germany and O. Ambacher, M. Stutzmann, Walter Schottky Institut, Am Coulombwall, TU München, 85748 Garching, Germany
- L-IP17 *EPITAXY OF GALLIUM NITRIDE BY HYDRIDE VPE*, O. Parillaud, V. Wagner, H.J. Bohlmann, and M. Illegems, Institute of Micro- and Optoelectronics, Swiss Federal Institute of Technology, 1015 Lausanne, Switzerland
- L-IP18 *DEPOSITION AND STRUCTURAL INVESTIGATION OF HEXAGONAL-CUBIC BORON NITRIDE FILMS*, A. Bonizzi, C.E. Bottani, R. Checchetto*, A. Miotello*, P.M. Ossi, INFN-Dipartimento di Ingegneria Nucleare, Politecnico di Milano, via Ponzio 34/3, 20133 Milano, Italy; *Dipartimento di Fisica, Università' di Trento, 38050 Povo (TN), Italy
- L-IP19 *GaN EPILAYERS ON TILTED SUBSTRATES*, C. Trager-Cowan, P.G. Middleton, K.P. O'Donnell, University of Strathclyde, Scotland and S.D. Hersee, Center for High Technology Materials, University of New Mexico, Albuquerque NM, USA
- L-IP20 *MO-MBE GROWTH OF GaN ON 6H-SiC WITHOUT BUFFER LAYER*, T. Honda, Y. Yamamoto and H. Kawanishi, Dept. of Electron. Eng., Kohgakuin University, 2665-1 Nakano-machi, Hachioji-shi, Tokyo 192-0015, Japan
- L-IP21 *SIMS ANALYSIS OF MG DOPED GaN FILMS PREPARED BY HWE*, A. Ishida, K. Matsuda, S. Chu, F. Tanoue*, S. Sakakibara*, K. Ishino, S. Fuke and H. Fujiyasu, Faculty of Engineering, Shizuoka University, 3-5-1 Johoku, Hamamatsu 432-8561, Japan, *YAMHA Corp., 203 Matsunokijima, Toyo-oka 438-0192, Iwata-gun, Japan
- L-IP22 *INFLUENCE OF THE ASSISTING ION BEAM ENERGY RANGES ON THE BN FILMS STRUCTURE*, L.V. Svadkovski, D.A. Golosov, A.P. Dostanko, D.A. Kotov, S.M. Zavadski, Belarussian State University of Informatics and Radioelectronics, Brovka Street 6, 220027 Minsk, Belarus
- L-IP23 *CARRIER TRANSPORT IN GaN GROWN BY MBE WITH DIFFERENT PLASMA SOURCES*, M. Fehrer, S. Einfeldt, U. Birkle, and D. Hommel, Institute of Solid State Physics, University of Bremen, Kufsteiner Str. NW1, 28359 Bremen, Germany
- L-IP24 *TEM STUDY OF {1010} INVERSION DOMAINS IN GaN GROWN ON (0001) SAPPHIRE SUBSTRATE*, V. Potin, P. Ruterana and G. Nouet, LERMAT, UPRESA 6004, ISMRA, 6 Bd du Maréchal Juin, 14050 Caen Cedex, France
- L-IP25 *DISORDERING PROCESSES IN ALUMINIUM NITRIDE*, A.P. Garshin, St. Petersburg State Technical University, Polytechnicheskaya 29, 195251 St. Petersburg, Russia and V. Shvaiko-Shvaikovskiy, Institute of Silicate Chemistry, Russian Academy of Sciences, ul. Odоеvskogo 24/2, 199155 St. Petersburg, Russia
- L-IP26 *ARSENIC ON CUBIC GaN SURFACES: SURFACTANT EFFECT VS INCORPORATION*, G. Feuillet, H. Hamaguchi, H. Okumura, S. Yoshida, Electrotechnical Laboratory 1-1-3 Umezono, Tsukuba, Ibaraki, 305 Japan, *CEA-Grenoble DRFMC, 17 rue des martyrs, 38041 Grenoble cedex 09, France

SYMPOSIUM L

- L-IP27 INVESTIGATION OF THE ATOMIC STRUCTURE OF THE PURE EDGE AND A + C THREADING DISLOCATIONS IN GAN LAYERS GROWN BY MBE, P. Ruterana, G. Nouet, V. Potin, R. Bonnet*, M. Loubradou*, Laboratoire d'Etudes et de Recherches sur les Matériaux, UPRESA CNRS 6004, Institut Sciences de la Matière et du Rayonnement, 6 Boulevard du Maréchal Juin, 14050 Caen Cedex, France; *Laboratoire de Thermodynamique et Physico-Chimie Métallurgiques, URA CNRS 29, Institut National Polytechnique de Grenoble, Domaine Universitaire, B.P. 75, 38402 Saint-Martin-D'Hères Cedex, France
- L-IP28 CHEMICAL BEAM EPITAXY OF GAN ON SAPPHIRE, M. Kappers, J.-L. Guyaux, J. Olivier, R. Bisaro, C. Gratepain and J.-C. Garcia, Thomson-CSF LCR, Domaine de Corbeville, 91404 Orsay Cedex, France
- L-IP29 HIGHLY TEXTURED HEXAGONAL AIN FILMS DEPOSITED AT LOW TEMPERATURE BY REACTIVE CATHODIC SPUTERRING, F. Brunet, F. Randriamora, A. Deneuve, P. Germi and M. Pernet, Lb. Cristallographie and LEPES, CNRS, BP 166, 38042 Grenoble Cedex 9, France
- L-IP30 OBSERVATION OF SILICON NANOCRYSTALS IN SiNx FILMS FORMED BY EXCIMER LASER OR THERMAL ANNEALING, M.D. Efremov, V.A. Volodin, V.A. Gritsenko, S.A. Kochubei, Institute of Semiconductor Physics SB RAS, pr. Lavrentjeva 13, Novosibirsk 630090, Russia

SYMPOSIUM L

Wednesday June 17, 1998
 Mercredi 17 juin 1998

Afternoon
 Après-Midi

Poster Session II
 18:10-19:30

- L-II/P1 CURRENT-VOLTAGE CHARACTERISTICS OF LED BASED ON GaN EPITAXIAL FILMS, S.V. Svechnikov, P.Ph. Oleksenko, G.A. Sukach, P.S. Smertenko, S.I. Vlaskina, A.B. Bogoslovskaya, I.O. Spichak, ISP NASU, prospekt Nauki 45, 252028 Kyiv, Ukraine; Nan-Ihn Cho, Sun Moon University, Churan, South Korea
- L-II/P2 ANNEALING BEHAVIOUR AND LATTICE SITE LOCATION OF Hf IMPLANTED GaN, E. Alves, M.F. da Silva, J.G. Marques*, J.C. Soares*, K. Freitag**, Instituto Tecnológico e Nuclear (ITN), EN 10, Sacavém, Portugal, *Centro de Física Nuclear da Univ. de Lisboa, Av. Prof. Gama Pinto 2, 1699 Lisboa, Portugal; **ISKP, Univ. Bonn, Nussallee Str, 53115 Bonn, Germany
- L-II/P3 STRUCTURAL CHARACTERISATION OF Mg ION-IMPLANTED GaN, A. Wenzel, C. Liu and B. Rauschenbach, Universität Augsburg, Institut für Physik, Memminger Str. 6, 86135 Augsburg, Germany
- L-II/P4 RAMAN SCATTERING SPECTROSCOPIC STUDY OF CUBIC GaN AND AlN GROWN BY MBE ON SiC(3C)/Si(100), E. Bustarret, G. Bentoumi, A. Deneuve, CNRS-LEPES, BP166X, 38042 Grenoble 9, France; F. Brunet, CNRS-Laboratoire de Cristallographie, BP166X, 38042 Grenoble 9, France and J. Hübner, G. Feuillet, B. Daudin, CEA-Grenoble DRFMC/SP2M, 17 rue des Martyrs, 38054 Grenoble Cedex 9, France
- L-II/P5 TRANSPORT IN GaN GROWN BY MBE WITH DIFFERENT PLASMA SOURCES, M. Fehrer, S. Einfeldt, U. Birkle, and D. Hommel, Institute of Solid State Physics, University of Bremen, Kufsteiner Str. NW1, 28359 Bremen, Germany
- L-II/P6 ERD-MEASUREMENTS ON GROUP-III-NITRIDES, S. Karsch, A. Bergmaier, G. Dollinger, Ch. Frey and O. Schmelmer, TU München, James-Frank-Strasse, 84748 Garching, Germany; O. Ambacher, M. Stutzmann, Walter-Schottky-Institut, TU München, Am Coulombwall, 85748 Garching, Germany
- L-II/P7 SMOOTH GAN SURFACES BY PHOTOINDUCED ELECTRO-CHEMICAL ETCHING, T. Rotter, J. Aderhold, D. Mistele, O. Semchinova, J. Stemmer, D. Uffmann and J. Graul, Laboratory for Information Technology, University of Hanover, Germany
- L-II/P8 LUMINESCENT PROPERTIES OF GaN THIN FILMS PREPARED BY PULSED LASER DEPOSITION, M. Cazzanelli, D. Cole and J.G. Lunney, Trinity College, Dublin 2, Ireland; K.P. O'Donnell, P.G. Middleton, C. Trager-Cowan, University of Strathclyde, Scotland; C. Vinegoni and L. Pavesi, INFN and Dipartimento di Fisica, Università di Trento, Povo (TN), Italy
- L-II/P9 LATTICE DYNAMICS OF BORON NITRIDE, H.W. Leite Alves, J.L.A. Alves, DCNAT-FUNREI, CP 110, 36.300-000 Sao Joao del Rei, MG, Brazil, J.L.P. Castineira and J.R. Leite, DFMM-IFUSP, CP 66318, 05389-970 Sao Paulo, SP, Brazil
- L-II/P10 THEORETICAL LEED PARAMETERS FOR THE ZINC-BLEND GaN(110) SURFACE, H.W. Leite Alves, J.L.A. Alves, DCNAT-FUNREI, CP 110, 36.300-000 Sao Joao del Rei, MG, Brazil, and J.R. Leite, DFMM-IFUSP, CP 66318, 05389-970 Sao Paulo, SP, Brazil
- L-II/P11 POLARITY SELECTIVE LATERAL PHOTOELECTROCHEMICAL ETCHING OF GaN, Taek Kim and Taeil Kim, Photonics Semiconductor Lab., Samsung Advanced Institute of Technology, P.O. Box 111, Suwon 440-600, Korea
- L-II/P12 EFFECT OF Si DOPING ON STRUCTURAL AND ELECTRONIC PROPERTIES OF GaN, N. Schmidt, A. Lebedev, W. Lundin, B. Pushnyi, V. Ratnikov, T. Shubina, A. Tsatsul'nikov, A. Usikov, Ioffe Physico-Technical Institute, St. Petersburg, 194021 Russia, and G. Pozina, B. Monemar, University of Linköping, 581 83 Linköping, Sweden
- L-II/P13 SURFACE PHOTOVOLTAGE SPECTROSCOPY AND DEEP LEVEL TRANSITIONS IN GaN, I. Shalish, L. Kronik, Y. Shapira, Y. Rosenwaks, Tel-Aviv University, Ramat Aviv 69978, Israel, U. Tisch and J. Salzman, Technion, Haifa 32000, Israel

SYMPOSIUM L

- L-II/P14 OPTICAL STUDIES OF THE CORRELATION BETWEEN BANDGAP FLUCTUATION, STOKES-LINE SHIFT AND OPTICAL GAIN IN GaN/InGaN QW's**, G. Bahir, Technion, Haifa 3200, Israel; D. Cohen, A. Abare, L. Coldren, S. Denbaars, University of California Santa Barbara, Santa Barbara CA 93106, USA
- L-II/P15 OPTICAL ANISOTROPY IN GAN GROWN ON A-PLANE SAPPHIRE**, A. Alemu, J. Campo, M. Julier, B. Gil and J. Lascaray, Groupe d'Etude des Semiconducteurs, CC074, Université de Montpellier II, Place Eugene Bataillon, 34095 Montpellier, France; S. Nakamura, Nichia Chemical, Anan, Japan
- L-II/P16 THERMAL STABILITY OF WSIX OHMIC CONTACTS ON GaN**, S.J. Pearton, S.M. Donovan and C.R. Abernathy, Department of Materials Science and Engineering, University of Florida, Gainesville FL 32611, USA; F. Ren, Department of Chemical Engineering, University of Florida, Gainesville FL 32611, USA; J.C. Zolper, Office of Naval Research, Arlington VA 22217, U.S.A.; M.W. Cole, US Army Research Laboratory, WMRD, Aberdeen Proving Ground Maryland 21105, USA; A. Zeitouny and M. Eizenberg, Department of Materials Engineering, Technion-Israel Institute of Technology, Haifa 32000, Israel; and R.J. Shul, Sandia National Laboratories, Albuquerque NM 87185, USA
- L-II/P17 ELECTRO-OPTICAL CHARACTERIZATION OF h-BN THIN FILM WAVEGUIDES BY PRISM-COUPLED TECHNIQUE**, J. Boudiomb and J.C. Louergue, Matériaux Optiques à Propriétés Spécifiques*, A. Bath and P. Thevenin, Laboratoire Interfaces Composants et Microélectronique*, *CLOES-Université de Metz et Supélec, 2 rue E. Belin, 57978 Metz, Cedex 03, France
- L-II/P18 PHOTOLUMINESCENCE OF PLASMA REMOTE CVD BN FILMS DEPOSITED ON Ge, GaAs AND InAs SUBSTRATES**, V.I. Belyi and A.A. Rastorguev, Institute of Inorganic Chemistry, Russian Academy of Sciences, Siberian Branch., Lavrentiev Ave. 3, 630090 Novosibirsk, Russia
- L-II/P19 PHOTOLUMINESCENCE OF PLASMA EXITED CVD Si₃N₄ FILMS DEPOSITED ON Si, Ge, GaAs AND InSb SUBSTRATES**, V.I. Belyi and A.A. Rastorguev, Institute of Inorganic Chemistry, Russian Academy of Sciences, Siberian Branch, Lavrentiev Ave. 3, 630090 Novosibirsk, Russia
- L-II/P20 SUBBANDGAP OPTICAL ABSORPTION OF MOVPE Ga-N GROWN UNDER CONTROLLED NUCLEATION**, P. de Mierry, H. Lahreche, S. Haffouz, P. Vennégues, B. Beaumont, F. Omnès, and P. Gibart, CNRS-CRHEA, rue B. Grégory, Sophia Antipolis, 06560 Valbonne, France
- L-II/P21 RESPONSIVITY OF GaN and (Ga,Al)N BAND-GAP GRADED ULTRAVIOLET p-n DETECTORS**, M.J. Malachowski, Institute of Physics, Pedagogical University, Al. Armii Krajowej 13/15, 42 201 Czechochowa, Poland
- L-II/P22 THE AlN SURFACE: A PHOTOELECTRON SPECTROSCOPY STUDY**, T. Wrase, P. Reinke, P. Oelhafen, Institut für Physik, University of Basel, Klingelbergstr.82, 4056 Basel, Switzerland, and P.K. Bachmann, H.-P. Loeb, Philips Research Laboratories Aachen, Weissshausstr. 2, 52066 Aachen, Germany
- L-II/P23 THE EMISSION SPECTRUM OF PULSED LASER DEPOSITED GaN AND ITS POWDER PRECURSOR**, K.P. O'Donnell, P.G. Middleton, C. Trager-Cowan, University of Strathclyde, Scotland and D. Cole, M. Cazzanelli, J.G. Lunney, Trinity College, Dublin, Ireland
- L-II/P24 THE OPTICAL AND STRUCTURAL PROPERTIES OF InGaN EPILAYERS WITH VERY HIGH INDIUM CONTENT**, P.G. Middleton, K.P. O'Donnell, C. Trager-Cowan, University of Strathclyde, Scotland; S.C. Bayliss, A. Sapelkin, De Montfort University, England and W. Van Der Stricht, I. Moerman, P. Demeester, IMEC-INTEC, University of Gent, Belgium
- L-II/P25 ION BEAM SPUTTER ETCHING OF GALLIUMNITRIDE GROWN BY CHLORIDE TRANSPORT LP-CVD**, M. Topf, F. Cavas, and B.K. Meyer, I. Physikalisches Institut, Universität Giessen, Heinrich-Buff-Ring 16, 35392 Giessen, Germany; B. Kempf, Deutsche Telekom Forschungs- und Technologiezentrum, Kavallerie Sud 3, 64276 Darmstadt, Germany and P. Veit, Institut fuer experimentelle Physik, Otto-von-Guericke Universität, Uni-Platz 2, 39106 Magdeburg, Germany
- L-II/P26 LOCAL STRUCTURE AND PHOTOLUMINESCENCE OF GaN POWDER PREPARED BY METATHESIS**, S.C. Bayliss, S.M. Clarck, A. Sapelkin, A. Filatov, I. Fletcher, R. Jones, Solid State Research Centre, De Montfort University, Leicester, UK; *Daresbury Laboratory SRS, Warrington, UK

SYMPOSIUM L

- L-II/P27 *PROPERTIES OF STRAINED AND UNSTRAINED III-NITRIDES*, J.-M. Wagner, K. Karch, and E. Bechstedt, Friedrich-Schiller-Universitaet Jena, Institut fuer Festkoerpertheorie und Theoretische Optik, Max-Wien-Platz 1, 07743 Jena, Germany
- L-II/P28 *A TUNABLE BLUE LIGHT EMISSION OF InGaN/GaN QUATUM WELL THROUGH THERMAL INTERDIFFUSION*, E. Herbert Li, M.C.Y. Chan, and E.M.T. Cheung, University of Hong Kong, Department of Electrical and Electronic Engineering, Pokfulam Road, Hong Kong
- L-II/P29 *PHOTOASSISTED ANODIC ETCHING OF GAN FILMS IN NAOH ELECTROLYTE MITH CL IONS*, Mitsugu Ohkubo, Akihiro Hashimoto and Akio Yamamoto, Faculty of Engineering, Fukui University, 3.9.1 Bunkyo, Fukui, 910-8507, Japan
- L-II/P30 *Observation of Ordering and Phase Separation in In_xGa_{1-x}N Layers Grown by MOVPE*, P. Ruterana, F. Deniel, Laboratoire d'Etudes et de Recherches sur les Matériaux, UPRESA CNRS 6004, Institut Sciences de la Matière et du Rayonnement, 6 Boulevard du Maréchal Juin, 14050 Caen Cedex, France
- L-II/P31 *ELECTROLUMINESCENT SPECTRA OF LEDs BASED ON AlGaInGaInGaInGaN-HETEROSTRUCTURES WITH MQWs*, Y.E. Kudryashov, A.N. Turkin, A.E. Yunovich, Moscow State Lomonosov University, 119899 Moscow, Russia; M. Koike, Toyoda Go.Co., 1 Nagahata, 452, Japan
- L-II/P32 *AB INITIO PSEUDOPOTENTIAL STUDY OF ELECTRONIC AND STRUCTURAL PROPERTIES IN GaN*, A. Zaoui, M. Certier, O. Pagès, M. Ferhat and H. Aourag*, Université de Metz, L.S.O.M., 8 rue Marconi, Technopole 2000, 57078 Metz Cedex 3, France; *Computational Materials Science Laboratory, Physics Department, University of Sidi-Bel-Abbes, 22000, Algeria
- L-II/P33 *DOPING OF Al_xGa_{1-x}N ALLOYS*, C. Stampfl and J. Neugebauer, Fritz-Haber-Institut, Faradayweg 4-6, 14195 Berlin-Dahlem, Germany; C.G. Van de Walle, Xerox PARC, 3333 Coyote Hill Road, Palo Alto, CA 94304, USA
- L-II/P34 *Last minute poster from UCSB*, Milan Singh Minsky, ECE Dept., University of California Santa Barbara, USA

E-MRS'98 SPRING MEETING



SYMPOSIUM M

**Molecular Photonics for Optical
Telecommunications:
Materials, Physics and Device Technology**

Symposium Organizers

J. ZYSS	France Telecom/CNET, Bagneux
F. GARNIER	CNRS, Labo. des Matériaux Moléculaires, Thiais, France
V. AGRANOVICH	Institute for Spectroscopy, Troitsk, Moscow obl., Russia

SYMPOSIUM M

(Tentative programme on April 8, 1998)

Tuesday, June 16, 1998
Mardi 16 juin 1998

Morning
Matin

SESSION I

Chairperson: P.N. Favenne

- | | | | |
|-------|-------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| M-I.1 | 8:30-9:15 | - Invited - | OVERVIEW OF POLYMERS FOR COMMUNICATIONS, G.I. Stegeman, CREOL, Un. Central Florida, 4000 Central Florida Blvd., Orlando FL 32826-2700, USA |
| M-I.2 | 9:15-10:00 | - Invited - | (TITLE NOT DEFINED), K. Sasaki, Keio University, Yokohama, Japan |
| M-I.3 | 10:00-10:45 | - Invited - | DESIGN AND FABRICATION OF ELECTRO-OPTICAL POLYMER MODULATORS AND SWITCHES, R.M. de Ridder, A. Driessen, E. Rikkers, P.V. Lambeck and M.B.J. Diemeer*, MESA Research Institute, University of Twente, PO Box 217, 7500 AE Enschede, The Netherlands; *Akzo Nobel Central Research, PO Box 9300, 6800 SB Arnhem, The Netherlands |
| | 10:45-11:15 | | BREAK |

SESSION II

- | | | | |
|--------|-------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| M-II.1 | 11:15-12:00 | - Invited - | INTERFACE MOLECULAR ENGINEERING FOR THIN FILM TRANSISTORS, Yue Kuo, IBM T.J. Watson Research Center, Yorktown Heights, NY 10598, USA |
| M-II.2 | 12:00-12:45 | - Invited - | DEVICES PERFORMANCE AND APPLICATIONS OF POLYMER LIGHT-EMITTING DIODES, R.E. Gill, P. van de Weijer, H.F.M. Schoo, C.T.H. Liedenbaum, Philips Research Laboratories, Prof. Holstlaan 4, 5656 AA Eindhoven, The Netherlands |
| | 12:45-14:00 | | LUNCH |

SYMPOSIUM M

Tuesday, June 16, 1998
Mardi 16 juin 1998

Afternoon
Après-midi

SESSION III

Chairperson: A. Driessen, MESA Research Inst., Univ. of Twente, Enschede, The Netherlands

- M-III.1 14:00-14:45 - Invited - (TITLE NOT DEFINED), R.H. Friend, Cavendish Laboratory, Cambridge University, Madingley Road, Cambridge CB3 0HE, UK
- M-III.2 14:45-15:30 - Invited - POLYMER LIGHT EMITTING DIODES: NEW MATERIALS AND DEVICES, Z. Bao, Z. Peng, J. A. Rogers, A. Dodabalapur, M.E. Galvin*, Bell Laboratories, Lucent Technologies, 600 Mountain Avenue, Murray Hill, NJ 07974, USA, **Department of Materials Science, University of Delaware, Newark, DE 19716, USA
- M-III.3 15:30-16:00 STRONG EXCITON-PHOTON COUPLING IN ORGANIC MICROCAVITIES, D.G. Lidzey, D.D.C. Bradley, M.S. Skolnick, T. Vergili, S. Walker, Department of Physics, The University of Sheffield, Hounsfield Road, Sheffield S3 7RH, UK

16:00-16:30

BREAK

SESSION IV

Chairperson: N. Ostrowski

- M-IV.1 16:30-17:00 TWO-LAYER ORGANIC LEDs USING DYE-DOPED PVK AND EVAPORATED SMALL MOLECULES, L. Berthelot, J. Tardy, M. Garrigues, J. Joseph and B. Masenelli, LEAME (UMR CNRS 5512), Ecole Centrale de Lyon, BP 163, 69131 Ecully Cedex, France
- M-IV.2 17:00-17:30 OPTICAL GAIN AT ROOM TEMPERATURE IN PPV-RELATED MATERIALS, N. de la Rosa-Fox, Optical Sciences Center, University of Arizona, Tucson, AZ 85721, USA
- M-IV.3 17:30-18:00 OPTICALLY PUMPED POLYMER LASER: GAIN, TUNABILITY, AND COHERENCE, G. Wegmann, H. Giessen, and R.F. Mahrt, Fachbereich Physik und Institut für Physikalische Chemie, Wissenschaftliches Zentrum für Materialwissenschaften, Philipps-Universität Marburg, Hans Meerwein Strasse, 35032 Marburg, Germany

SYMPOSIUM M

Wednesday, June 17, 1998
Mercredi 17 juin 1998

Afternoon
Après-midi

SESSION V

Chairperson: R.H. Friend, Cavendish Laboratory, Cambridge University, Cambridge, UK

- | | | | |
|-------|-------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| M-V.1 | 14:00-14:45 | - Invited - | TRANSIENT ELECTROLUMINESCENCE FROM PPV: HOT ELECTRONS AND IMPACT IONIZATION, D. Davidov, Racah Institute of Physics, Hebrew University of Jerusalem, Jerusalem, Israel |
| M-V.2 | 14:45-15:30 | - Invited - | A MODEL OLIGOMER APPROACH FOR SEMICONDUCTING POLYMER MATERIALS, G. Hadzioannou, University of Groningen, Department of Polymer Chemistry, Nijenborgh 4, 9747 AG Groningen, The Netherlands |
| M-V.3 | 15:30-16:00 | | (TITLE NOT DEFINED), Kouki |
| | 16:00-16:30 | | BREAK |

SESSION VI

Chairperson: D. Davidov, Racah Institut of Physics, Hebrew Univ. of Jerusalem, Israel

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| M-VI.1 | 16:30-17:15 | - Invited - | SELF-ASSEMBLED INTERFACIAL LAYERS IN ORGANIC LIGHT-EMITTING DIODES, L. Zuppiroli, Laboratoire de Physique des Solides Semicristallins, Département de Physique, Ecole Polytechnique Fédérale de Lausanne, 1015 Lausanne, Switzerland |
| M-VI.2 | 17:15-17:45 | | UP-CONVERTED STIMULATED EMISSION IN MONOLITHIC ORGANIC SINGLE-CRYSTALS, V. Dumarcher, J.M. Nunzi, LETI (CEA - Technologies Avancées), DEIN / SPE, Groupe Composants Organiques, Saclay, 91191 Gif sur Yvette, France and D. Fichou, Laboratoire des Matériaux Moléculaires, UPR 241 - CNRS, 2 rue Henry Dunant, 94320 Thiais, France |
| M-VI.3 | 17:45-18:15 | | ORIGIN OF EVOLVED GAS IN ORGANIC LIGHT-EMITTING DIODES, L.S. Liao, J. He, X. Zhou, X.Y. Miao, Z.H. Xiong, and X.Y. Hou, Surface Physics Laboratory, Fudan University, Shanghai 200433, China |

SYMPOSIUM M

Thursday, June 18, 1998
Jeudi 18 juin 1998

Morning
Matin

SESSION VII

Chairperson: K. Sasaki, Keio University, Yokohama, Japan

M-VII.1 8:30-9:15 - Invited - (TITLE TO BE DEFINED), Shi, Tacan Corporation, Carlsbad, CA, USA (To be confirmed)

M-VII.2 9:15-9:45 PHOTOCONDUCTIVITY STUDIES OF NEW ORGANIC PHOTO-REFRACTIVE MATERIALS, T.K. Däubler and D. Neher, Max-Planck-Institut für Polymerforschung, Ackermannweg 10, 55128 Mainz, Germany, H.-H. Hörhold, Friedrich-Schiller-Universität, Humboldtstr. 10, 07743 Jena, Germany, K. Meerholz, Ludwig-Maximilians-Universität, Sophienstr. 11, 80333 München, Germany

M-VII.3 9:45-10:15 ZWITTEWONIC MOLECULES AS DOPING CHROMOPHORES FOR EFFICIENT PHOTOREFRACTIVE POLYMERS, A. Fort, L. Mager, J. Muller, C. Combellas*, G. Mathey*, A. Thiébault*, IPCMS, Groupe d'Optique Non Linéaire et d'Optoélectronique, 23 Rue du Loess, 67037 Strasbourg Cedex, France, *ESPCI, Environnement et Chimie Analytique, 10 Rue Vauquelin, 75231 Paris Cedex, France

M-VII.4 10:15-10:45 THIRD-HARMONIC GENERATION AS A SELECTION TOOL FOR ORGANIC MATERIALS FOR NONLINEAR INTEGRATED OPTICS DEVICES, F.C. Blom, A. Driessen, H.J.W.M. Hoekstra, J. B.P. van Schoot and Th.J.A. Popma, MESA Research Institute, University of Twente, PO Box 217, 7500 AE Enschede, The Netherlands

10:45-11:15 BREAK

SESSION VIII

Chairperson: G. Stegeman, CREOL, Un. Central Florida, Orlando, USA

M-VIII.1 11:15-11:45 IRRADIATED THICKNESS EFFECTS ON THE LIGHT-EMITTING DEVICES MADE BY ION BEAM ASSISTED DEPOSITION, R. Antony, B. Lucas, B. Ratier and A. Moliton, UMOP, Faculté des Sciences, 123 Av Albert Thomas, 87060 Limoges, France

M-VIII.2 11:45-12:15 FROM ELECTRICAL TO ALL OPTICAL IN-PLANE POLING OF POLYMER BASED ELECTROOPTIC MODULATOR, A. Donval*, E. Toussaere*, S. Brasselet**, J. Zyss***, *France Telecom-CNET/DTD/CDP/EQM, 196 Av Henri Ravera, 92225 Bagneux, France; **ENS Cachan, LPQM, 61 av. du Pres. Wilson, 94235 Cachan, France

M-VIII.3 12:15-12:45 FILMS OF A NOVEL POLYDIACETYLENE FOR PHOTONIC STUDIES, A. Cravino, L. Moggio, C. Dell'Erba, D. Comoretto, C. Cuniberti, G. Dellepiane, DCCI, Via Dodecaneso 31, 16146 Genova, Italy; D. Grando and S. Sottini, IROE, Via Panciatichi 56, 50127 Firenze, Italy

12:45-14:00 LUNCH

Thursday, June 18, 1998
Jeudi 18 juin 1998

SYMPOSIUM M

Afternoon
Après-midi

SESSION IX

Chairperson: Z. Bao, Bell Laboratories, Lucent Technologies, Murray Hill, NJ, USA

- M-IX.1 14:00-14:45 - Invited - SPIN TRANSITION COMPOUNDS: FROM MOLECULAR MATERIALS TOWARD MEMORY DEVICES, O. Kahn, Laboratoire des Sciences Moléculaires, Institut de Chimie de la Matière Condensée de Bordeaux, UPR CNRS n°9048, 33608 Pessac, France
- M-IX.2 14:45-15:15 TOWARDS HIGHLY EFFICIENT NONLINEAR OPTICAL CHROMOPHORES: MOLECULAR ENGINEERING OF OCTUPOLAR MOLECULES, J-B. Baudin, R. Lorne, L. Jullien, M. Blanchard-Desce, Ecole Normale Supérieure, Département de Chimie (URA 1679), 24 Rue Lhomond, 75231 Paris Cedex 05, France and S. Brasselet, J. Zyss, Département d'Electronique Quantique et Moléculaire, France Télécom, 196 avenue Henri Ravera, 92225 Bagneux Cedex, France
- M-IX.3 15:15-15:45 SUPPRESSION OF MULTIPHOTON FLUORESCENCE IN HYPER-RAY-LEIGH SCATTERING, G. Olbrechts, T. Hunters, K. Clays and A. Persoons, Center for Research on Molecular Electronics and Photonics, University of Leuven, Celestijnenlaan 200 D, 3001 Leuven, Belgium
- M-IX.4 15:45-16:15 POLYENOVANILLINS FOR NONLINEAR OPTICS, T. Zabulon, T. Brotin, C. Andraud, A. Collet, Ecole Normale Supérieure de Lyon, 69364 Lyon Cedex 07, France and S. Brasselet, I. Ledoux, J. Zyss, Centre National d'Etude des Télécommunications, France-Télécom, Bagneux et LPQM, ENS-Cachan, France
- 16:15-16:45 BREAK

SESSION X

Chairperson: O. Kahn, Laboratoire des Sciences Moléculaires, Institut de Chimie de la Matière Condensée de Bordeaux, Pessac, France

- M-X.1 16:45-17:30 - Invited - OPTICS AT NANOMETRIC SCALE: LOCAL PROBES AND ENHANCED FIELDS, L. Aigouy, J.C. Rivoal, S. Gresillon, A. Larech, H. Cory and A.C. Boccara, Ecole Supérieure de Physique et Chimie Industrielle de la Ville de Paris, UPR A0005 du CNRS, Laboratoire d'Optique Physique, 10 Rue Vauquelin, 75005 Paris, France
- M-X.2 17:30-18:15 - Invited - COMMUNICATION ON THE NANOSCALE THROUGH LOCALIZED ELECTROMAGNETIC RESONANCES ?, V. Langlais, R. Schlittler, J.K.Gimzewski, IBM Zürich Research Laboratory, Säumerstrasse 4, 8803 Rüschlikon, Switzerland
- M-X.3 18:15-18:45 NEAR-FIELD ELECTROLUMINESCENCE IN POLYMER LIGHT-EMITTING DIODES, F. Charra, S. Bouchel, O. Plessis, DRECAM-SRSIM CEA Saclay, 91191 Gif-sur-Yvette, France, and E. Gautier-Thianche, J.M. Nunzi, LETI (CEA - Technologies Avancées), DEIN/SPE, Groupe Composants Organiques, Saclay, 91191 Gif-sur-Yvette, France

POSTER SESSION

18:45-19:30 See programme of this poster session p. M-9 to M-11.

SYMPOSIUM M

Friday, June 19, 1998
Vendredi 19 juin 1998

Morning
Matin

SESSION XI

- M-XI.1 8:30-9:15 - Invited - RELAXATION OF EXCITONS IN CONJUGATED POLYMERS, M.Schott, Groupe de Physique des Solides, UMR 75-88 du CNRS, Universités Paris 7 et 6, 2 Place Jussieu, 75251 Paris Cedex 05, France
- M-XI.2 9:15-9:45 LUMINESCENCE OF OLIGOPHENYLENEVINYLENE FILMS DOPED WITH LOW-ENERGY GAP HOMOLOGUES, D. Oelkrug, J. Gierschner, H.-J. Egelhaaf, U. Stalmach*, K. Müllen**, Institute of Physical Chemistry, University of Tübingen, Germany; Dept. Of Polymer Chemistry, Materials Science Centre, University of Groningen, The Netherlands,** Max-Planck-Institut für Polymerforschung, Mainz, Germany
- M-XI.3 9:45-10:15 MOMENTUM DEPENDENT ELECTRONIC EXCITATIONS IN OLIGOMERS: SEXIPHENYL AND SEXITHIOPHENE, M. Knupfer, T. Pichler, M. S. Golden and J. Fink, Institut für Festkörper- und Werkstofforschung Dresden, 01171 Dresden, Germany; E. Zojer and G. Leising, Institut für Festkörperforschung, TU Graz, Petersgasse 16, 8010 Graz, Austria; M. Murgia, R. H. Michel, R. Zamboni, C. Taliani, Istituto di Spettroscopia Molecolare, Consiglio Nazionale delle Ricerche, Via P. Gobetti 101, 40129 Bologna, Italy

10:15-10:45

BREAK

SESSION XII

Chairperson: M. Schott, Groupe de Physique des Solides, Univ. Paris 7 & 6, Paris France

- M-XII.1 10:45-11:15 FIELD-ASSISTED FEMTOSECOND PUMP/PROBE MEASUREMENTS ON CONJUGATED SYSTEMS, Ch. Zenz, G. Lanzani, INFN, University of Sassari, Via Vienna 2, 07100 Sassari, Italy; G. Cerullo, S. De Silvestri, Politecnico di Milano, P.za Leonardo da Vinci 32, 20133 Milan, Italy; W. Graupner, F. Meghdadi, G. Leising, Inst. für Festkörperphysik, Petersgasse 16, 8010 Graz, Austria
- M-XII.2 11:15-11:45 CHARGE INJECTION AND TRAPPING EFFECTS IN DPOP-PPV POLYMER FILMS, F. Michelotti, V. Tagi, M. Bertolotti, Università degli Studi di Roma «La Sapienza»- Dipartimento di Energetica & INFN, Via A. Scarpa 16, 00161 Roma, Italy; and T. Gabler, H.H. Hörhold, Friedrich Schiller universität, Jena, Germany; and A. Bräuer, Fraunhofer Institut, Jena, Germany
- M-XII.3 11:45-12:15 EFFECT OF MOLECULAR ORDERING ON THE PHOTOPHYSICS OF ORGANIC HETEROMULTILAYER STRUCTURES, M. Muccini, E. Lunedei, P. Moretti, F. Biscarini, M. Murgia, R. Zamboni, and C. Taliani, ISM - CNR, Via Gobetti 101, 40129 Bologna, Italy; R.F. Mahrt, FB Physikalische Chemie der Philipps-Universität Marburg, Hans-Meerweinstrasse, 35032 Marburg, Germany
- M-XII.4 12:15-12:45 LIGHT EMISSION FROM WELL DEFINED MOLECULES, M. Hanack, M. Hohloch, D. Hohholz, F. Lange, Inst. f. Org. Chemie LS II, Auf der Morgenstelle 18, 72076 Tübingen, Germany

12:45-14:00

LUNCH

Friday, June 19, 1998
Vendredi 19 juin 1998

SYMPOSIUM M

Afternoon
Après-midi

SESSION XIII

- M-XIII.1 14:00-14:45 - Invited - ORGANIC FIELD-EFFECT TRANSISTORS AND ALL-POLYMER INTEGRATED CIRCUITS, M. Matters, M.C.J.M. Vissenberg*, C.J. Drury, C. Mutsaers, C. Hart, P. Herwig and D.M. de Leeuw, Philips Research Labs, Prof. Holstlaan 4, 5656AA Eindhoven, The Netherlands, *also at Instituut-Lorentz, University of Leiden, The Netherlands
- M-XIII.2 14:45-15:15 ORGANIC NONLINEAR OPTICAL THIN FILMS PREPARED BY MOLECULAR BEAM DEPOSITION AT OBLIQUE INCIDENCE, B. Müller, C. Cai, Y. Tao, A. Kündig, M. Bösch, C. Bosshard, P. Günter, Institute of Quantum Electronics, ETH Zürich
- M-XIII.3 15:15-15:45 A COMBINED CAPACITY/IMPEDANCE AND PHOTOELECTRON SPECTROSCOPY INVESTIGATION ON THE METAL/ORGANIC INTERFACE IN LIGHT EMITTING DEVICES, J. Laubender, F. Baier, M. Sololowski, E. Umbach, Universität Würzburg, EP II, Am Hubland, 97074 Würzburg, Germany
- M-XIII.4 15:45-16:15 OPTICALLY DETECTED MAGNETIC RESONANCE STUDIES OF NANOSTRUCTURED PPV-COMPOSITES E.J.W. List, P. Markart, W. Graupner, G. Leising, Institut für Festkörperphysik, Technische Universität Graz Petersgasse 16, 8010 Graz, Austria; J. Pardee, J. Shinar, Ames Laboratory-U.S. DOE, ISU, Ames, Iowa 50011; R. Smith, D. Gin Dept. of Chemistry, Univ. of California, 94720 Berkeley, USA

END OF SYMPOSIUM M

Other announced contributions:

(TITLE NOT DEFINED), J. Delaire, ENS Cachan, France

TRANSIENT BEHAVIOR OF PHOTOINDUCED ORDERING PROCESSES IN DYE-DOPED POLYMERS, Ahmad El Osman and M. Dumont, Laboratoire Charles Fabry de l'Institut d'Optique, Bât. 503, BP 147, 91403 Orsay Cedex, France

SYMPOSIUM M

SYMPOSIUM M
POSTER SESSION

Thursday, June 18, 1998
Jeudi 18 juin 1998

Afternoon
Après-midi

Poster Session
18:45-19:30

- M/P1 FT-IR AND FT-RAMAN SPECTRA OF A SERIES OF OXIDIZED, α,α' -DIETHYL END-CAPPED OLIGO-THIENYLS: A SPECTROSCOPIC STUDY OF CONJUGATIONAL MODEL DEFECTS, J. Casado, S. Hotta*, V. Hernandez and J.T. Lopez Navarrete; Departamento de Química Física, Universidad de Málaga, 29071 Málaga, Spain; *Matsushita Research Institute Tokyo, Inc. Advanced Material Research Laboratory, 3-10-1 Higashimita, Tanaku, Kawasaki 214, Japan
- M/P2 NONLINEAR OPTICAL PROPERTIES OF POLYMOLECULAR FILMS, V.A. Barachevsky, Photochemistry Center of Russian Academy of Sciences, 7a Novatorov Str., Moscow 117421, Russia
- M/P3 THERMALLY AND OPTICALLY INDUCED SPIN TRANSITION EFFECT ON STRUCTURE OF IRON(II) POLYMERIC COMPLEXES BY XAFS SPECTROSCOPY, S.B Erenburg, N.V. Bausk, L.G. Lavrenova, Institute of Inorganic Chemistry RAS, 630090 Novosibirsk, Russia
- M/P4 STUDY THERMAL PROPERTIES OF ELECTRON IRRADIATED METALLIZED POLYIMIDE FILMS, A.I. Kupchishin, N.V. Shmygaleva, K.B. Tlebaev, B.G. Tepikin, Almaty State University, Dostyk 13, 480100 Almaty, Kazakhstan
- M/P5 TWO PEAKS RESONANT MODEL OF ENERGY ABSORPTION BY IRRADIATED LINEAR POLYMERS, A.I. Kupchishin, Almaty State University, Dostyk 13, 480100 Almaty, Kazakhstan
- M/P6 ION SHRINKAGE OF FLUORIDE POLYIMIDE, T. Trigaud, J.P. Moliton, M. Quillat, D. Chiron, UMOP, Faculté des Sciences, 123 Av Albert Thomas, 87060 Limoges, France
- M/P7 FIELD-EFFECT ELECTROLUMINESCENCE IN A POLYMER CHANNEL, E. Gautier-Thianche, C. Sentein, A. Lorin and J.M. Nouri, LETI (CEA - Technologies), DEIN / SPE, Groupe Composants Organiques, Saclay, 91191 Gif sur Yvette, France
- M/P8 ORGANIC LIGHT-EMITTING DEVICES BASED ON OLIGO (PARA-PHENYLENE)S, D. Sainova, U. Scherf, V. Cimrova and D. Neher, Max-Planck-Institut für Polymerforschung, Ackermannweg 10, 55128 Mainz, Germany
- M/P9 ION BEAM ASSISTED ETCHING FOR THE REALIZATION OF OPTICAL GUIDES, B. Lucas, C. Moussant, A. Moliton, UMOP, Faculté des Sciences, 123 Av Albert Thomas, 87060 Limoges, France
- M/P10 REALIZATION OF RED LIGHT-EMITTING DIODES WITH A CONFINEMENT LAYER, R. Antony, B. Ratier and A. Moliton, UMOP, Faculté des Sciences, 123 Av Albert Thomas, 87060 Limoges, France
- M/P11 REACTIVE ION BEAM ETCHING AND OPTICAL CHARACTERISATION OF POLYPARAXYLYLENE FILMS FOR WAVE GUIDE APPLICATIONS, B. Ratier, A. Moliton, UMOP, University of Limoges, 123 av Albert Thomas, 87060 Limoges, France, and P. Audebert, University of Franche Comté, Laboratoire de Chimie et d'Electrochimie Moléculaire, Route de Gray, La Bouloie, 25030 Besançon, France
- M/P12 CHARACTERIZATION OF A POLYMERIC MULTILAYER STRUCTURE FOR ELECTRO-OPTIC APPLICATIONS BY MEANS OF THE ELLIPSOMETRIC REFLECTION TECHNIQUE, V. Taggi, F. Michelotti, M. Bertolotti, Università degli Studi di Roma «La Sapienza»- Dipartimento di Energetica, Via Antonio Scarpa 16, 00161 Roma, Italy; and E. Toussaere, J. Zyss, France Telecom-CNET, Laboratoire de Bagneux, 196 Av. H. Ravera, 92225 Bagneux Cedex, France
- M/P13 LASER INDUCED RELAXATION OF THE ELECTRO-OPTIC PROPERTIES OF POLED COPOLYMERS, E. Michelotti, G. Nicolao, V. Tagi, M. Bertolotti, Università degli Studi di Roma «La Sapienza»- Dipartimento di Energetica & INFN, Via A. Scarpa 16, 00161 Roma, Italy; and E. Toussaere, J. Zyss, France Telecom-CNET, Laboratoire de Bagneux, 196 Av. H. Ravera, 92225 Bagneux Cedex, France

SYMPOSIUM M

- M/P14 **STRUCTURAL CHARACTERIZATIONS OF TETRAHEXYLSEXITHIOPHENE ORDERED FILMS BY ORGANIC MOLECULAR BEAM DEPOSITION**, C. Bota, S. Destri, W. Porzio, Istituto di Chimica delle Macromolecole del C.N.R., Via E. Bassini 15, 20133 Milano, Italy; A. Sassella, A. Borghesi, R. Tubino, Dipartimento di Scienza dei Materiali, Università di Milano, via Emanuelli 15, 20126 Milano, Italy
- M/P15 **MODIFIED MELAMINE RESINS FOR OPTICAL APPLICATIONS**, J. Mahler and G. Rafler, Fraunhofer Institute of Applied Polymer Research, Kantstrasse 55, 14513 Teltow, Germany
- M/P16 **ELECTROPOLYMERIZATION OF OLIGOTHIOPHENE SELF- ASSEMBLED MONOLAYERS**, A. Yassar, R. Michalitsch, C. Nougues, A. Morisset, C. Bournat, P. Lang, A. El Kasmi, Laboratoire des Matériaux Moléculaires, CNRS, 2 rue Henry Dunant, 94320 Thiais, France
- M/P17 **SYNTHESIS AND ELECTRICAL CHARACTERIZATION OF NOVEL ELECTRON TRANSPORTING MATERIALS: , DICYANO OLIGOTHIOPHENES**, A. Yassar, F. Demanze, C. Coupry* and D. Fichou, Laboratoire des Matériaux Moléculaires, CNRS, 2 rue Henry Dunant, 94320 Thiais, France; *Laboratoire de Spectroscopie Infra-rouge et Raman CNRS, 2, rue Henry Dunant, 94320 Thiais, France
- M/P18 **AUTOMATION OF SCIENTIFIC RESEARCH, SCIENTIFIC RESEARCH AND RADIATION TREATMENT OF LARGE VOLUME OF PRODUCTS WITH COMPLEX OF ACCELERATORS OF ALMATY STATE UNIVERSITY**, E.K. Balafanov, N.A. Voronova, L.G. Kolodin, A.I. Kupchishin, B.A. Tronin, V.V. Fomintsev, Almaty State University, Dostyk 13, 480100 Almaty, Kazakhstan
- M/P19 **A NEW METHOD TO EVALUATE THE BENDS IN POLYMER OPTICAL FIBRES**, M. Machhout, R. Attia and A. Bouallège, Laboratoire des Systèmes de Télécommunications, Ecole Nationale d'Ingénieurs de Tunis, BP37, Le Belvédère, 1002 Tunis, Tunisia
- M/P20 **POLYMER-C60 EXCITON MIXING**, S.V. Rotkin, Ioffe PTI, Polytechnicheskaya 26, 194021 St-Petersburg, Russia
- M/P21 **LIGHT SCATTERING INSIDE POLYMER OPTICAL FIBERS**, S. Jarboui, M. Machhout, L.S.Télécoms, Ecole Nationale des Ingénieurs de Tunis, BP37, Le Belvédère, 1002 Tunis, Tunisia
- M/P22 **ORIENTATIONAL DYNAMICS OF DOPING CHROMOPHORES IN LOW Tg PHOTOREFRACTIVE POLYMERS**, J. Muller, C. Melzer, O. Cregut, A. Fort, L. Mager, J.-F. Nicoud*, S. Méry*, GONLO, GMO*, IPCMS, 23, rue du Loess, 67037 Strasbourg Cedex, France
- M/P23 **RAMAN SCATTERING OF LOW-DEFECT POLYACETYLENE**, V.M. Kobryanskii, Institute of Chemical Physics, Kosygin St. 4, 117977 Moscow, Russia, Dmitry Yu. Parashuk, Moscow State University, Moscow, Russia, Alexander N. Shegolkhin, Institute of Biochemical Physics, Moscow, Russia, Albert H. Kuptsov, Federal Center of Forensic Science, Moscow, Russia, Nikolay N. Melnik, P.N.Lebedev Physical Institute, Moscow, Russia
- M/P24 **PHOTO- AND ELECTROLUMINESCENCE OF DOPED POLYMERS IN LANGMUIR-BLODGETT STRUCTURES**, A.A. Avdienko, Institute for Low Temperature Physics & Engineering, NAS of Ukraine, 47 Lenin Ave., 310164 Kharkov, Ukraine, B.M. Krasovitskii, O.V. Tolmachev, K.B. Volodarskii, N.I. Voronkina, Institute for Single Crystals, NAS of Ukraine, 60 Lenin Ave., 310001 Kharkov, Ukraine
- M/P25 **LUMINESCENCE OF C₆₀ THIN FILMS AT LOW TEMPERATURES**, A.A. Avdienko, V.V. Eremenko, N.B. Silaeva, Yu.A. Tiunov, P.V. Zinoviev, Institute for Low Temperature Physics and Engineering, National Academy of Sciences, Kharkov 310164, Ukraine, N.P. Churakova, N.I. Gorbenko, and A.T. Pugachov, Kharkov State Polytechnical University, 310002 Kharkov, Ukraine
- M/P26 **THEORETICAL INVESTIGATION OF PHENYLENE-BASED MATERIALS IN THEIR PRISTINE AND DOPED STATE**, E. Zojer, Institut für Festkörperphysik, Technische Universität Graz, Petersgasse 16, 8010 Graz, Austria; J. Cornil and J.-L. Brédas, Service de Chimie des Matériaux Nouveaux, Université de Mons-Hainaut, 7000 Mons, Belgium; G. Leising, Institut für Festkörperphysik, Technische Universität Graz, Petersgasse 16, 8010 Graz, Austria
- M/P27 **SYNTHETIS AND PROPERTIES OF POLY(ARYLENE VINYLENE)S WITH CONTROLLED STRUCTURES**, Ch. Lartigue, W.J. Feast, Durham University, South Road, Durham DH1 3LE, UK and F.C. Cacialli, R.H. Friend, Cavendish Laboratory, Cambridge University, Madingley Road, Cambridge CB3 0HE, UK
- M/P28 **MOLECULAR-DOPED POLYMERIC LANGMUIR - BLODGETT FILMS FOR MOLECULAR ELECTRONICS**, N.I. Voronkina, K.B. Vodolazhsky, A.V. Tolmachev, Institute for Single Crystals, Lenin Ave., 60, 310001 Kharkov, Ukraine
- M/P29 **EFFICIENT SINGLE LAYER YELLOWISH LIGHT EMITTING DIODES MADE OF A BLEND OF A LADDER-TYPE POLY(P-PHENYLENE) AND POLYTHIOPHENE**, E.J.W. List, L. Holzer, S. Tasch, G. Leising, Institut für Festkörperphysik, Technische Universität Graz, Petersgasse 16, 8010 Graz, Austria; S. Luzzati, Istituto di Chimica delle Macromolecole-CNR, Via Bassini 15, 20133 Milano, Italy

SYMPORIUM M

- M/P30 *TOWARDS THE 3D SOLID PHOTONIC CRYSTALS, N. V. Gaponenko, V.V. Shushunova, Belarusian State University of Informatics and Radioelectronics, 220027 Minsk, Belarus, A.M. Kapitonov, D.A. Yarotsky, S.V. Gaponenko, Institute of Molecular and Atomic Physics, National Academy of Sciences of Belarus, 220072 Minsk, Belarus, V.N. Bogomolov, Ioffe Physico-Technical Institute, Russian Academy of Sciences, 194021 St. Petersburg, Russia and J. F. McGilp, Trinity College, Dublin 2, Ireland*
- M/P31 *AN ORGANO-MINERAL CRYSTAL FOR BLUE SHG: CRYSTAL GROWTH AND QUADRATIC OPTICAL EFFECT OF 2A5NPCL, N.Horiuchi, F.Lefauchaux, LMCP, Univ. Paris 6 et 7, Paris, A.Ibanez, CNRS, Grenoble and D.Josse, J.Zyss, CNET/DTT, Bagneux, France*
- M/P32 *LINEAR AND NON-LINEAR GRATINGS IN DRI SIDE CHAIN POLYMERS, P. Labbé, E. Toussaere, France Telecom-CNET/DTT, BP 107, 196 Av Henri Ravera, 92225 Bagneux Cedex, France*
- M/P33 *ERBIUM PHOTOLUMINESCENCE IN SOL-GEL DERIVED TITANIUM DIOXIDE FILMS, N. V. Gaponenko, A. V. Mudryi, O. V. Sergeev, V. E. Borisenko, Belarusian State University of Informatics and Radioelectronics, P. Browki 6, 220027 Minsk, Belarus, H. Gnaser, Institut für Oberflächen- und Schichtanalytik, Universität Kaiserslautern, 67663 Kaiserslautern, Germany.*
- M/P34 *APPLICATION OF HIGH RESOLUTION SCANNING PHOTOLUMINESCENCE AND ELECTROLUMINESCENCE TO ASSESS THE LATERAL HOMOGENEITY OF ORGANIC LEDs AND PLANAR MICROCAVITIES, L. Berthelot, M. Garrigues, J. Tardy, J. Joseph and B. Masenelli, LEAME (UMT CNRS 5512), Ecole Centrale de Lyon, BP 163, 69131 Ecully Cedex, France*
- M/P35 *TOWARDS HIGHLY EFFICIENT NONLINEAR OPTICAL CHROMOPHORES: MOLECULAR ENGINEERING OF CHARGED PUSH-PULL MOLECULES, V. Alain, M. Blanchard-Desce, Ecole Normale Supérieure, Département de Chimie (URA 1679), 24 rue Lhomond, 75231 Paris Cedex 05, France and S. Brasselet, I. Ledoux, J. Zyss, Département d'Electronique Quantique et Moléculaire, France Télécom, 196 avenue Henri Ravera, 92225 Bagneux Cedex, France*
- M/P36 *OPTICAL CONSTANTS OF HIGHLY ORIENTED OLIGO THIOPHENE FILMS AND NANOPARTICLES, H.J.Egelhaaf, J. Haiber, J. Gierschner, D. Oelkrug, Institute for Physical Chemistry, University, Auf der Morgenstelle 8, 72076 Tübingen, Germany*

E-MRS'98 SPRING MEETING



SYMPOSIUM N

**Materials and Processes
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New Jersey Institute of Technologies, Newark, USA

SYMPOSIUM N

Tuesday, June 16, 1998
Mardi 16 juin 1998

Afternoon
Après-midi

SESSION I - Metallizations, Part 1

- N-I.1 14:00-14:45 - Invited - INTERCONNECT TRENDS IN MICROELECTRONICS, E. Martinez-Gutiérrez, Bell Labs, Murray Hill, Lucent Technologies, New York, USA
- N-I.2 14:45-15:00 THE DEPENDENCE OF THE NUCLEATION AND GROWTH OF CVD Al FILM ON THE TIN LINER DEPOSITION METHOD, M. Avinun, W.D. Kaplan, M. Eizenberg, Department of Materials Engineering, Technion, Haifa, Israel, T. Guo and R. Mosely, Applied Materials, Santa Clara, CA, USA
- N-I.3 15:00-15:15 STUDY OF Cu CONTAMINATION DURING COPPER INTEGRATION FOR SUB-QUARTER MICRON TECHNOLOGY, P. Motte, J. Torres, J. Palleau, F. Tardif, H. Bernard, CEA/LETI, 17 rue des Martyrs, 38054 Grenoble cedex 9, France
- N-I.4 15:15-15:30 THE INTERACTION OF METALS AND BARRIER LAYERS WITH FLUORINATED SILICON OXIDES, S.E. Kim and C. Steinbrüchel, Department of Materials Science and Engineering and Center for Integrated Electronics and Electronics Manufacturing, Rennselaer Polytechnic Institute, Troy NY 12180, USA
- N-I.5 15:30-15:45 OXYGEN LOCALIZATION IN THIN TIN LAYERS OBTAINED BY RAPID THERMAL CVD AT LOW TEMPERATURE, L. Imhoff, A. Bouteville, H. de Baynast, J.C. Remy, Laboratoire de Physico-Chimie des Surfaces, ENSAM - CER d'Angers, 2 Bd du Ronceray, BP 3525, 49035 Angers, France
- N-I.6 15:45-16:00 OBSERVATION OF CURRENT POLARITY EFFECT IN STRESSING AS-FORMED SUB-MICRON Al-Si-Cu/TiW/TiSi₂ CONTACTS, Li-Zen Chen, Klaus Y.-J. Hsu, National Tsing Hua Univ., Dept. of Electrical Eng., Hsinchu, Taiwan, ROC
- N-I.7 16:00-16:15 COBALT SILICIDE THERMAL STABILITY: FROM BLANKET THIN FILM TO SUB-MICROMETER LINES, A. Alberti, M.G. Grimaldi, E. Rimini, Physics Department, Catania University, Italy, F. La Via, CNR-IMETEM, Catania, Italy, S. Ravesi, ST Microelectronics, Catania, Italy

SYMPOSIUM N

Wednesday, June 17, 1998 Afternoon
 Mercredi 17 juin 1998

Après-midi

SESSION II - Metallizations, Part 2

- N-II.1 14:00-14:30 - Invited - SUBMICRON Cu-METALLIZATIONS, J. Torres, GRESSI, CENT/CEA, Grenoble, France
- N-II.2 14:30-14:45 AN INVESTIGATION INTO THE PERFORMANCE OF DIFFUSION BARRIER MATERIALS AGAINST COPPER DIFFUSION USING METAL-OXIDE-SEMICONDUCTOR (MOS) CAPACITOR STRUCTURES, V.S.C. Len, N. McCusker, D.W. McNeill, B.M. Armstrong and H.S. Gamble, Dept. of Electrical Engineering, The Queen's University of Belfast, Belfast BT7 1NN, Northern Ireland
- N-II.3 14:45-15:00 SILICIDE REACTION OF Co WITH $\text{Si}_{0.999}\text{C}_{0.001}$, S. Teichert, M. Falke, H. Giesler, G. Beddies and H.-J. Hinneberg, Institute of Physics, Chemnitz University of Technology, 09107 Chemnitz, Germany, G. Lippert, J. Griesche and H.-J. Osten, Institute of Semiconductor Physics Frankfurt/Oder, Walter-Korsing-Strasse 2, 15230 Frankfurt, Germany
- N-II.4 15:00-15:15 CHARACTERISTICS OF SPUTTER-DEPOSITED TiN, ZrB₂, AND W₂B DIFFUSION BARRIERS FOR ADVANCED METALLIZATIONS TO GaAs, M. Guziewicz, A. Piotrowska, E. Kaminiska, K. Golaszewska, Institute of Electron Technology, Al. Lotników 46, 02668 Warsaw, Poland, A. Turos, Institute for Nuclear Studies, Warsaw, Poland
- N-II.5 15:15-15:30 TEM STUDIES OF THE MICROSTRUCTURE EVOLUTION IN PLASMA TREATED CVD TiN THIN FILMS USED AS DIFFUSION BARRIERS, S. Ikeda*, N. Bourhila, B. Chenevier R. Madar, Laboratoire des Matériaux et Génie Physique, URA CNRS 5628, ENSPG, BP46, 38402 Saint-Martin d'Hères, France and J. Palleau, J. Torres, GRESSI CNET/FT, Chemin du Vieux Chêne, BP 98, Meylan, France *also: National Research Institute for Metals, Sengen, Tsukuba, Ibaraki 305 Japan
- N-II.6 15:30-15:45 INVESTIGATION OF IMP Ta/TaN AS DIFFUSION BARRIER LAYER BETWEEN COPPER AND SILICON DIOXIDE, G. Chuang, K.M. Yin, G.T. Chen, L. Chang, J.J. Kai, Department of Engineering and System science, National Tsing-Hua University, Taiwan, R.O.C. and H. Zhang, B. Chin, F.S. Chen, Metal Deposition Group, Applied Materials, Santa Clara, USA
- N-II.7 15:45-16:00 TEXTURING, SURFACE ENERGETICS AND MORPHOLOGY IN THE C49-C54 TRANSFORMATION OF TiSi₂, L. Miglio, M. Iannuzzi; M.G. Grimaldi*; F. La Via** ; F. Marabelli***, S. Bocelli***, S. Santucci****, A.R. Phani****, Istituto Nazionale di Fisica della Materia, Unità di Milano, Catania*, Pavia**, L'Aquila***; IMETEM-CNR di Catania****, Italy
- N-II.8 16:00-16:15 ELECTROMIGRATION IN COPPER INTERCONNECTS, N. McCusker, V.S.C. Len, D.W. McNeill, B.M. Armstrong and H.S. Gamble, Dept. of Electrical Engineering, The Queen's University of Belfast, Belfast BT7 1NN, Northern Ireland

SYMPOSIUM N

Thursday, June 18, 1998
Jeudi 18 juin 1998

Morning
Matin

SESSION III - Lithography

- | | | |
|---------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| N-III.1 | 10:30-10:45 | <i>SPUTTERED TUNGSTEN FILMS ON POLYIMIDE, AN APPLICATION FOR X-RAY MASKS, <u>J. Ligot</u>, S. Benayoun, J.J. Hantzpergue, J.C. Remy, Laboratoire de Physico-Chimie des Surfaces ENSAM-CER d'Angers, 2 Bd du Ronceray, BP 3525, 49035 Angers, France</i> |
| N-III.2 | 10:45-11:00 | <i>POLYMER ISSUES IN NANOIMPRINTING TECHNIQUE, F. Gottschalch, <u>Th. Hoffmann</u>, C.M. Sotomayor Torres, Institute of Materials Science, Department of Electrical Engineering; H. Schulz, H.-Ch. Scheer, Micropatterning in Electrical Engineering, Department of Electrical Engineering, University of Wuppertal, Fuhlrottstr. 10, 42097 Wuppertal, Germany</i> |
| N-III.3 | 11:00-11:15 | <i>NANOMETER SCALE LITHOGRAPHY ON SILICON, TITANIUM AND PMMA RESIST USING SCANNING PROBE MICROSCOPY, <u>E. Dubois</u>, J.-L. Bubbendorff, IEMN/ISEN, UMRS CNRS 9929, 59652 Villeneuve d'Ascq, France</i> |
| N-III.4 | 11:15-11:30 | <i>DEEP SUBMICROMETER PATTERNING OF EPITAXIAL CoSi₂/Si (100) BY LOCAL OXIDATION, <u>Q.T.Zhao</u>, M. Dolle, L. Kappius, St.Mesters and S.Mantl, Institut für Schicht- und Ionentechnik, Forschungszentrum Jülich, 52425 Jülich, Germany</i> |
| N-III.5 | 11:30-11:45 | <i>HOLOLITHOGRAPHY : HOLOGRAPHY OF PARTICLE BEAMS : PRINCIPLES, POSSIBILITIES AND PRESENT REALISATIONS, <u>M. Grosmann</u>, S. Guedda, Université L. Pasteur, 67000 Strasbourg, France and H. Fujita, Chuo-Gakuin University, Abiko City 270-1163, Japan</i> |
| | 11:45-14:00 | LUNCH |

SYMPOSIUM N

Thursday, June 18, 1998
Jeudi 18 Juin 1998

Afternoon
Après-midi

SESSION IV - Poster Session

14:00-16:00

See programme of this poster session p. N-7 to N-8.

SYMPOSIUM N

Friday, June 19, 1998
Vendredi 19 Juin 1998

Matin
Morning

SESSION V - Nanomaterials

- N-V.1 9:15 :9:45 - Invited - FORMATION MECHANISMS AND APPLICATIONS OF POROUS SILICON, V.P. Parkhutik, Dpto. De Termodinamica Aplicada, Universidad Politécnica de Valencia, Camino de Vera s/n, 46071 Valencia, Spain
- N-V.2 9:45-10:00 THE SMTAGB (SYMMETRIC-MEDIUM-TILT-ANGLE-GRAIN-BOUNDARY) AS A NANOMETRIC SUPERSTRUCTURE, H.F. Mataré, Internat. Solid State Electronics Consultants, Malibu, CA 90265, USA
- N-V.3 10:00-10:15 TWO DIMENSIONAL NANOWIRE FORMATION ON Si SUBSTRATE USING SELF-ORGANIZED NANOHOLES OF ANODICALLY OXIDIZED ALUMINUM, S. Shingubara, O. Okino, H. Sakaue, and T. Takahagi, Hiroshima University, Dept. of Electrical Engineering, Kagamiyama 1-4-1, Higashi- Hiroshima 739-8527, Japan
- N-V.4 10:15-10:30 COULOMB BLOCKADE: POISSON VERSUS PAULI IN A SILICON QUANTUM BOX, L. Palun, LETI, CEA, 17 Rue des Martyrs, 38054 Grenoble Cedex 9, G. Lamouche and G. Fishman, Laboratoire de Spectrométrie Physique - UMR C5588, Université Joseph Fourier - Grenoble 1 - CNRS, BP 87, 38402 Saint-Martin d'Hères Cedex, France
- 10:30-11:00 BREAK
- N-V.5 11:00-11:15 SPECTRAL CHARACTERIZATION OF POROUS SILICON BASED PHOTODIODES, R.J. Martín-Palma, R. Guerrero-Lemus, J.D. Moreno and J.M. Martínez-Duart, Departamento de Física Aplicada, C-12, Universidad Autonoma de Madrid, 28049 Cantoblanco, Madrid, Spain
- N-V.6 11:15-11:30 THE FORMATION OF NARROW NANOCLUSTER BANDS IN GE-IMPLANTED SiO₂-LAYERS, J. von Borany, K.-H. Heinig, A. Markwitz, and B. Schmidt, Institut für Ionenstrahl-Physik und Materialforschung, Forschungszentrum Rossendorf, PO Box 51 01 19, 01314 Dresden, Germany
- N-V.7 11:30-11:45 INFLUENCE OF POST-ETCHING TREATMENTS IN THE PHOTOLUMINESCENCE OF POROUS SILICON, R. Guerrero-Lemus, J.D. Moreno, F.J. Martín-Palma and J.M. Martínez-Duart, Dpto de Física Aplicada, Univ. Autonoma de Madrid, 28049 Madrid, Spain
- N-V.8 11:45-12:00 SYNTHESIS OF Cds NANOPARTICLES IN MOR TYPE ZEOLITES, H. Villavicencio García*, M. Hernandez Velez*, O. Sanchez Garrido**, J.M. Martínez Duart*** and J. Jimenez Lopez****, *Grupo de Zeolitas y Propiedades Dielectricas en Solidos, L.S.P. "E.J. Varona", C. Libertad, Marianoa, C. de la Habana, Cuba ; **Instituto de Ciencia de Materiales, CSIC, Madrid, Spain, ***Dpto de Física Aplicada, Universidad Autonoma de Madrid, Spain, ****Dpto de Física de la Material Condensada, Universidad de Valladolid, Spain
- 12:00 LUNCH

END OF SYMPOSIUM N

SYMPOSIUM N

SYMPOSIUM N
POSTER SESSION

Thursday June 18, 1998
Jeudi 18 juin 1998

Afternoon
Après-midi

SESSION IV - Poster Session
14:00-16:00

- N-IV/P1 THERMAL CONDUCTIVITY OF THE NANOMATERIALS, J. Marciak-Kozłowska, Institute of Electron Technology, Al. Lotnikow 32/46, 02-668 Warsaw, Poland
- N-IV/P2 HYDROGEN REDISTRIBUTION AND DEGRADATION OF THIN SILICON DIOXIDE AND SILICON NITRIDE FILMS DURING ELECTRON INJECTION AND THERMAL TREATMENT IN HIGH FIELDS, G.V. Gadiyak, Institute of Computational Technologies, Russian Academy of Sciences, Siberian Division, Prospekt Lavrentjeva 6, 630090 Novosibirsk, Russia
- N-IV/P3 FOCUSED ION BEAM STRUCTURING OF Si AND Si/CoSi₂ HETEROSTRUCTURES USING ADSORBED HYDROGEN AS A RESIST, H. Fuhrmann, M. Döbeli, R. Mühle, Paul-Scherrer-Institut, c/o IPP, ETH-Hönggerberg, 8093 Zürich, Switzerland
- N-IV/P4 KINETICS OF ULTRATHIN SiO₂ FILMS GROWTH IN OXYGEN, A.A. Evthukh, V.G. Litovchenko, A. Yu. Kizijak, Yu.M. Pedchenko, Institute of Semiconductor Physics, 45 Prospekt Nauki, Kiev 252650, Ukraine
- N-IV/P5 PROCESSING AND CHARACTERISATION OF SOL-GEL DEPOSITED Ta₂O₅ AND TiO₂-Ta₂O₅ DIELECTRIC THIN FILMS, A. Cappellani Siemens AG, ZT ME 1, Corporate Technology, Otto-Hahn-Ring 6, 81730 Munich, Germany; J.L. Keddie, N.P. Barrada and S. Jackson, University of Surrey, Guildford, GU2 5XH Surrey, UK
- N-IV/P6 THE INFLUENCE OF ARC PLASMA JET TREATMENT ON CHARGE STATE OF MOS STRUCTURE, V.V. Andreyev Bauman Moscow State Technical University, Kaluga Branch, 4, Bazhenov St., Kaluga, 248600, Russia; J.O. Lichmanov RIC «Lepton» Moscow, 103489, post box 19, Russia; V.M. Maslovsky, Zelenograd Research Physical Problems Institute, Moscow, 103460, Russia; G. Ya. Pavlov, Scientific industrial Concern «Scientific Center», Moscow, 103460, Russia
- N-IV/P7 MOLECULAR DYNAMICS SIMULATION OF VOID IN AN ALUMINIUM INTERCONNECTION CONTAINS TRIPLE POINTS GRAIN BOUNDARIES, S. Abdeslam and S. Shingubara, Plasma Electronics Laboratory, Department of Electrical Engineering, Hiroshima University, Kagamiyama 1-4-1, Higashi Hiroshima, 739, Japan
- N-IV/P8 INVESTIGATION OF PROPERTIES OF POROUS SILICON EMBEDDED WITH ZnSe and CdSe, A.I. Belogorokhov, Institute of Rare Metals, Leninsky prosp., 156-517, Moscow 117571, Russia, L.I. Belogorokhova, Moscow State University, Physics Department, S. Gavrilov, Institute of Materials for Electronics, Russia
- N-IV/P9 THE ELECTRONIC STRUCTURE OF ULTRA DISPERSE HYDROXYAPATITES OF CALCIUM AND STRONTIUM, A.P. Shpak, V.L. Karbovskii, L.P. Kluyenko, 36 Vernadsky Str., Institute of Metal Physics, Ukrainian NAS, Kiev 252142, Ukraine
- N-IV/P10 SURFACE ROUGHNESS OF CoSi₂ AND Ba₂SiO₄ BUFFER LAYERS IN YBa₂Cu₃O_{7-x}/BUFFER/Si HETEROSTRUCTURES, L. Belousov, and G. Kuznetsov IMP NAS 252180 Kiev, Ukraine, P. Kus, CU, 84215 Bratislava, Slovakia, S. Linzen and P. Seidel, Institut für Festkörperphysik, FSU Jena, 07743 Jena, Germany
- N-IV/P11 EXCIMER LAMP-INDUCED DECOMPOSITION OF PLATINUM ACETYLACETONATE FILMS FOR ELECTROLESS COPPER PLATING, Jun-Ying Zhang and I.W. Boyd, Dept. of E & E Eng., University College London, Torrington Place, London WC1E 7JE, UK
- N-IV/P12 OXIDATION OF RF PLASMA - HYDROGENATED CRYSTALLINE SILICON, S. Alexandrova and A. Szekeres, Institute of Solid State Physics, Bulgarian Academy of Sciences, Tzarigradsko Chaussee 72, 1784 Sofia, Bulgaria
- N-IV/P13 RESIDUAL STRAIN IN BONDED SOI WAFER AND INFLUENCE ON ELECTRON MOBILITY, T. Iida, T. Itoh, Y. Takano, Science Univ. of Tokyo, 2641 Yamazaki, Noda, 278-0114 Japan
- N-IV/P14 CONFIGURATIONAL MODEL FOR SINGLE-ELECTRON AND PHOTONIC PROCESSES SIMULATION IN NANOSTRUCTURES, A.A. Khodin, Institute of Electronics, National Academy of Sciences, Logoisky tract 22, 220090 Minsk, Belarus

SYMPOSIUM N

N-IV/P15 POROUS ALUMINA AS LOW-E INSULATOR FOR PLANAR SUBMICRON METALLIZATION, S. Lazarouk, P.Jaguiro, S.Katsouba, Belarusian State University Informatics and Electronics, P.Brovki 6, 220027, Minsk, Belarus

N-IV/P16 Si-BASED OPTICAL INTERCONNECTIONS AND THEIR INTEGRATION WITH ELECTRONIC CIRCUIT COMPONENTS, S. Lazarouk, P. Jaguiro, Belarusian State University Informatics and Electronics, P.Brovki 6, 220027, Minsk, Belarus

N-IV/P17 CONDUCTING AFM STUDIES OF ELECTRON TRANSPORT PROPERTY IN NANOMETER $\text{Fe}_x(\text{SiO}_2)_{1-x}$ COMPOSITE, W. Wu, J.B. Xu, E.Z. Luo, I.H. Wilson, Dept of Electronic Engineering, The Chinese University of Hong Kong, Hong Kong, X. Yan, Department of Physics, Hong Kong University of Science and Technology, Hong Kong

N-IV/P18 DIELECTRIC RELAXATION AND D.C. CONDUCTION PROCESSES IN AMORPHOUS SiO_xN_y THIN FILMS, F. Fernandez Gutierrez*, O. Sanchez Garrido**, M. Hernandez Velez*,*** and J.M. Martinez Duart****, *Facultad de Ciencias ISP "E.J. Varona", C. de la Habana, Cuba ; **Instituto de Ciencia de Materiales, CSIC, Cantoblanco, 28049 Madrid, Spain ; ***Departamento de Física Aplicada, Universidad Autonoma de Madrid, Spain

E-MRS 1998 Spring Meeting

June 16-19, 1998 - Strasbourg (France)

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Wednesday June 17, 1998
Mercredi 17 juin 1998

Evening
Soirée

CONFERENCE RECEPTION
Congress Center

20:00

including the presentation of the E-MRS Graduate Student Award winners.